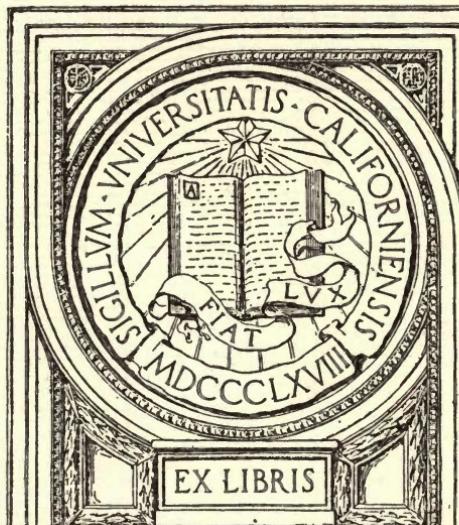


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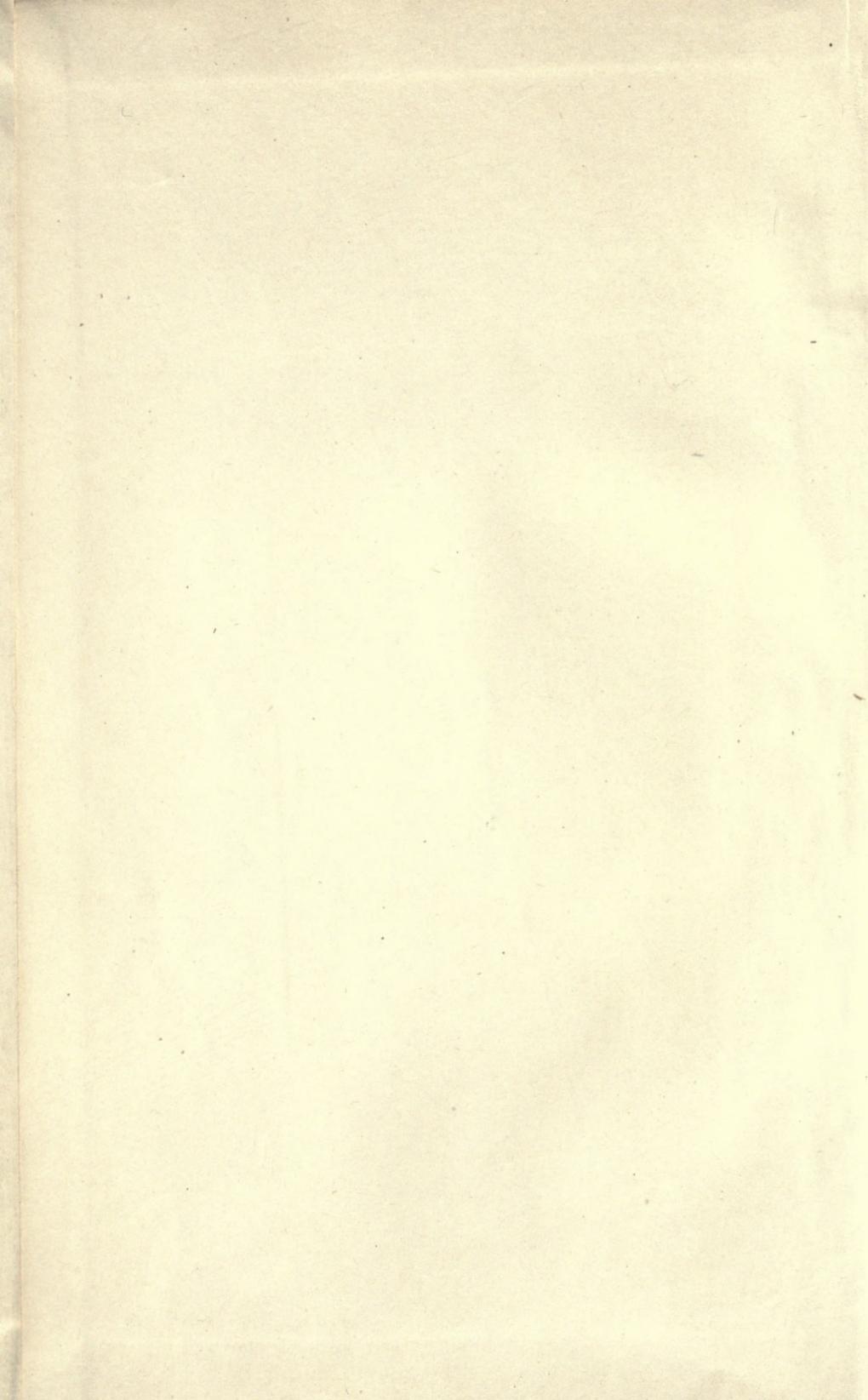


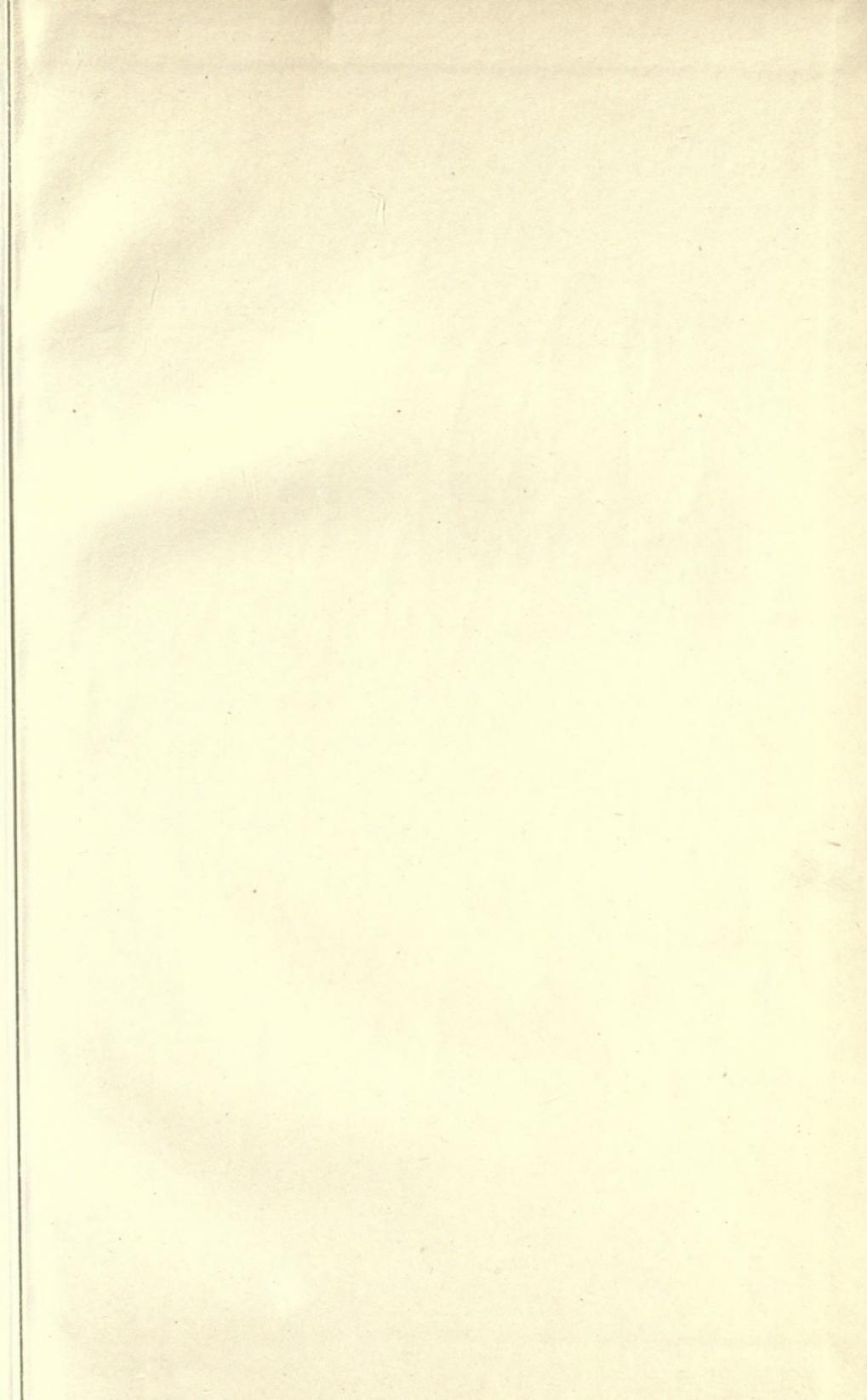
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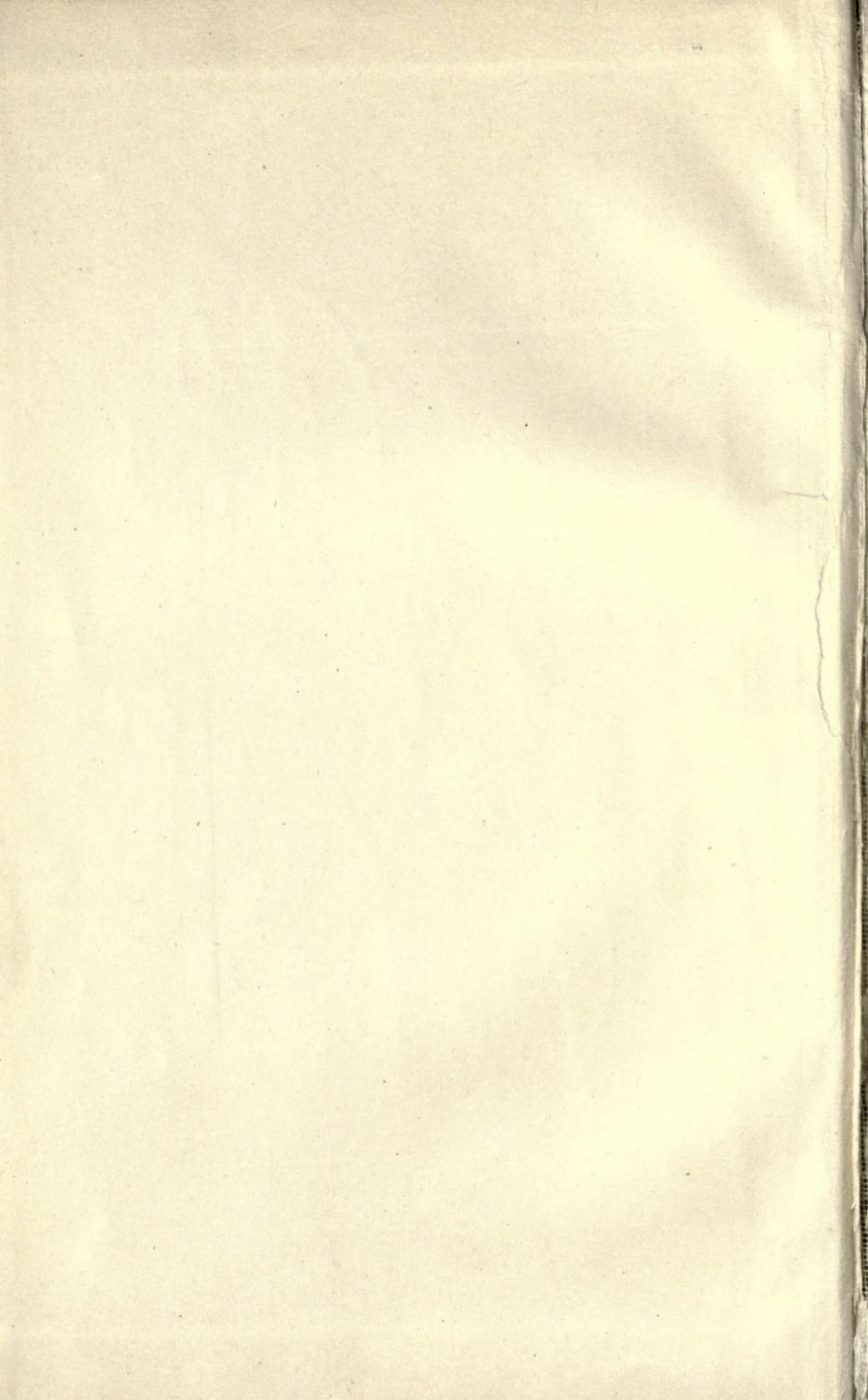
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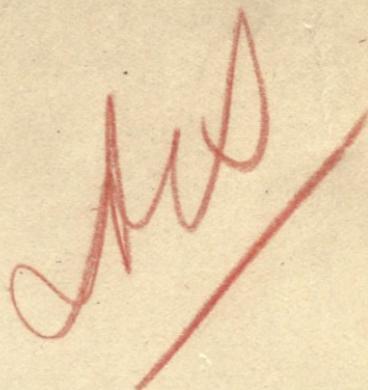
BY

WILLIAM A. TAYLOR,

Promulgator, in Charge of Field Investigations, Bureau of Plant Industry.

[REPRINT FROM YEARBOOK OF DEPARTMENT OF AGRICULTURE FOR 1903.]

Page	Year	STRAWBERRY
44	1905	Gardiner, ...
511	1915	Gressel, ...



LITTLE-KNOWN FRUIT VARIETIES CONSIDERED WORTHY OF WIDER DISSEMINATION.

BY

WILLIAM A. TAYLOR,

Pomologist, in Charge of Field Investigations, Bureau of Plant Industry.

[REPRINT FROM YEARBOOK OF DEPARTMENT OF AGRICULTURE FOR 1901.]

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LITTLE-KNOWN FRUIT VARIETIES CONSIDERED WORTHY OF WIDER DISSEMINATION.

By WILLIAM A. TAYLOR,

Pomologist, in Charge of Field Investigations, Bureau of Plant Industry.

INTRODUCTION.

In the introduction and dissemination of new fruits by commercial methods there is always danger that new varieties will be too largely planted in regions to which they are not adapted. Planters who learn of the remarkable success of a new sort in a remote section are inclined to plant it largely without sufficient investigation of its characteristics and requirements. This not infrequently brings upon them unnecessary financial loss.

With the present methods of illustrated advertising, the danger of inconsiderate planting is probably greater than in earlier days. Until comparatively recent times, the varieties of tree and vine fruits introduced from year to year were chiefly chance seedlings that had established their worth in the localities where they originated by a record of many years of production in comparison with the other sorts grown in the same localities. Records of a quarter of a century or more of fruitfulness are not infrequent in the histories of many of our standard varieties before they were accorded any special notice or propagated for dissemination in a commercial way. During these years of trial the changing seasons, with their extremes of heat and cold, rainfall and drought, brought to light such defects and weaknesses as existed in a variety, and the inferior sorts being weeded out in advance of general dissemination, future disappointment and loss were, no doubt, to a very considerable extent prevented.

Only a few of the thousands of the varieties that have been described and disseminated in America during the past century have survived and are now esteemed worthy of planting. At present, and with increasing frequency, varieties of many of the tree fruits are introduced within a few years after the first fruiting of the original trees, and necessarily, therefore, before the characteristic features are well known, even in the original locality. The risk of failure with such sorts is proportionately great, particularly in sections possessing different soil and climate, or where the market requirements are radically

different. The orchardist should, in general, therefore, be cautious in planting comparatively untried sorts. He should proceed in an experimental way, investigating as thoroughly as possible the requirements and characteristics of any sort unknown in his locality before planting it on a commercial scale. A few of the little-known fruit varieties, selected from a large number introduced in recent years, are described and illustrated in this paper with a view to furnishing detailed information to growers who desire to undertake a trial of sorts that have demonstrated their usefulness and value to an extent that warrants their wide dissemination and testing in climatic regions similar to those in which they have already been grown.

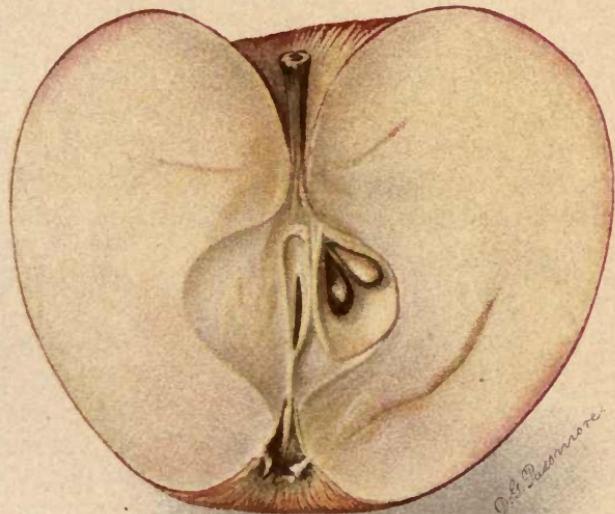
INGRAM APPLE.

(SYNONYMS: *Ingram Seedling*; *Ingraham*.)

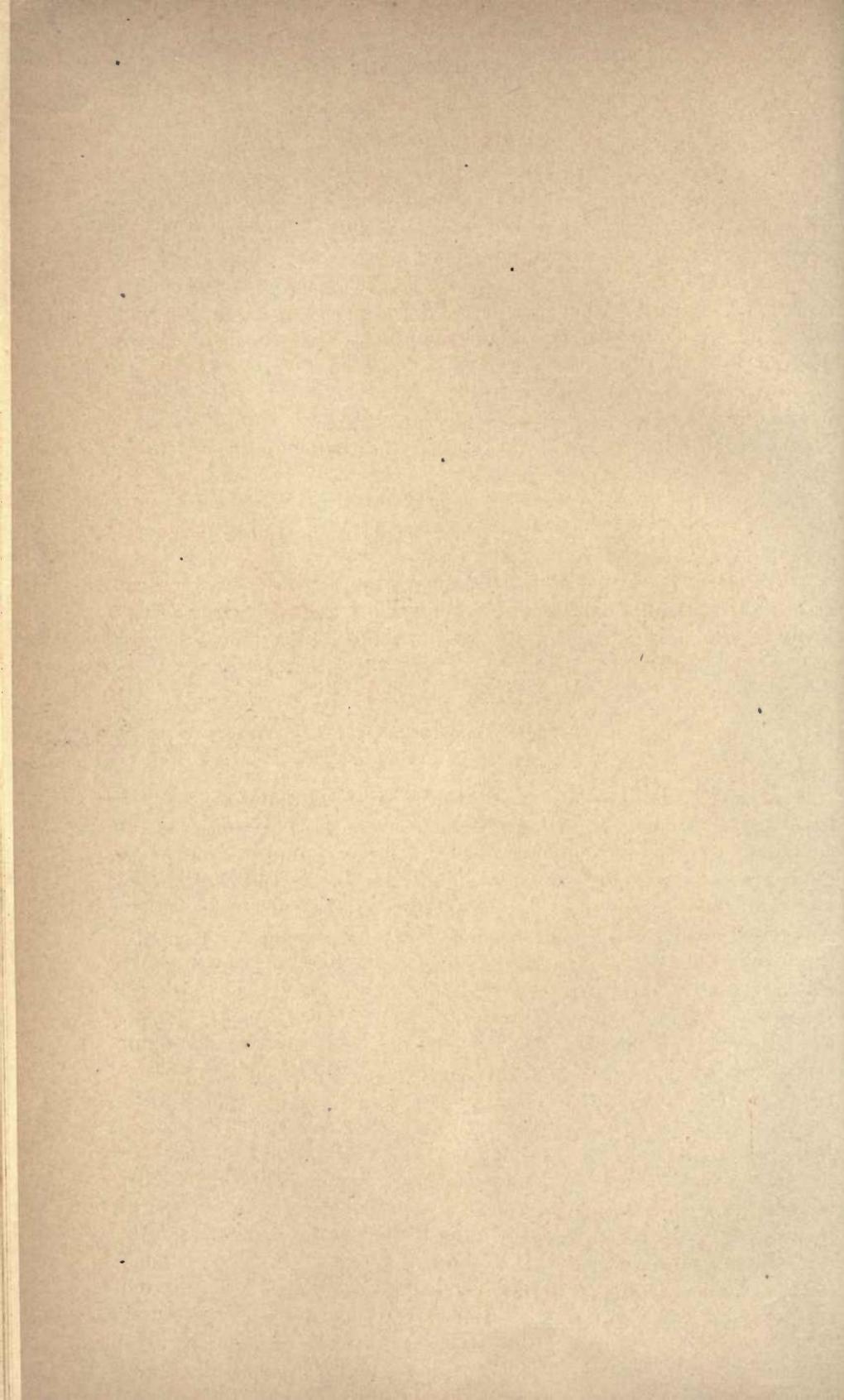
[PLATE XLVI.]

During the past five years this apple, which has long been grown in certain localities in Missouri, has attracted marked attention as a variety well adapted to planting in commercial orchards in that and neighboring States. Combining, as it does, the desirable characteristics of the old Ralls (variously known in the Middle and Southern States under the synonyms *Rawles Genet*, *Rawles Janet*, *Geniton*, *Neverfail*, and some twenty-five others), with larger size and brighter color than that well-known sort, it appears to have been first described and illustrated under the name *Ingram Seedling* in the Journal of Agriculture, published at St. Louis, Mo., and somewhat later, in 1868, in the Horticulturist, Vol. XXIII, p. 201.

According to various accounts, the variety originated from the planting of seeds of the "Ralls," by Mr. Martin Ingram, or his son Jack, 6 miles east of Springfield, Mo., about 1850 or 1855. Several trees were grown from the same lot of seed, and when they came into bearing the fruit was so hard that it was considered worthless. All were destroyed except one which had belonged to the boy Jack, who had then left home for the West. In the spring of 1862, when apples were scarce in the locality, several specimens were found under the tree in sound condition. They were not yet in eating condition, but when ripe, later in the spring, were of excellent flavor. The variety became locally known as "Little Jack," and was gradually planted throughout the neighborhood because of its productiveness and long-keeping qualities. Later it gained wide popularity, especially in Missouri and Arkansas, until it is now being largely planted in commercial orchards, especially in the former State, where one orchard as large as 240 acres is solidly set with it. The specimen shown in Pl. XLVI was furnished by Mr. L. A. Goodman, of Kansas City, Mo., secretary of the Missouri State Horticultural Society.



INGRAM APPLE.



DESCRIPTION.

Form roundish conical; size medium; surface smooth, pale yellow, washed with red, splashed and striped with crimson and overspread with gray toward the base, often covered with thin lilac bloom; dots gray, some with dark centers and often slightly indented toward apex; cavity regular, of medium size and depth and gradual slope, distinctly striped; stem rather short and stout; basin of medium size and slope and depth, slightly leather-cracked; calyx segments medium, reflexed at tip, eye closed or partially open, skin thick, tough, tenacious; core oval, of medium size, nearly closed, meeting the eye; seeds numerous, of medium size, angular, brown; flesh yellowish, fine grained, hard until fully ripe, then tender and juicy; flavor subacid; quality good to very good; season April to June in cellar storage in Missouri, but has been kept two years in this way.

The tree is an upright grower, hardy, blooming late, bearing regular, large crops. Its only defect appears to be its tendency to overbear, thus reducing the size of the fruit.

This variety is considered worthy of systematic testing throughout the South, especially in the mountain regions, where its parent, "Ralls," is one of the most reliable of the long-keeping apples, both for home use and for market.

M'INTOSH APPLE.

(SYNONYM: *McIntosh Red.*)

[PLATE XLVII.]

Among the winter apples of Northern origin that are as yet but little known to commercial growers, perhaps none shows a wider adaptability to diverse conditions or gives larger promise of success in the representative apple-growing regions than the McIntosh. Unlike many of the recently introduced varieties, it has not been widely advertised nor pushed by nurserymen, but it has steadily made its way through its intrinsic merit, and is now grown, to a limited extent, in many States. The original tree of this variety was discovered and saved, with several other seedlings of about 10 or 15 years old, by the late John McIntosh, in clearing away second-growth timber for a building place on his farm in Matilda Township, in the present village of Dundela, Ontario, Canada, about 1798. This original tree, though seriously injured by the burning of the homestead near it some years ago, is still standing, and is, therefore, more than a century old. The variety was not propagated in a nursery until 1837, when the son of the discoverer began its propagation in his nursery. It does not appear to have reached the United States until after 1870.

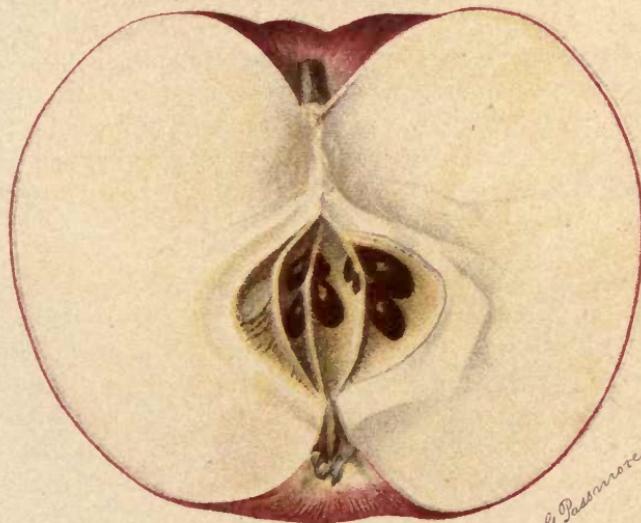
Charles Downing described it under the name "McIntosh Red," in the second appendix to the second revised edition of "Fruits and fruit trees of America," published in 1876, as "a good, annual bearer

of fair, handsome fruit of excellent quality, and valuable for home use and market." It is doubtful, however, whether he had fruited the variety himself at that time. Since that date it has gradually spread through the nurseries of Canada and the United States, frequently under the names of other varieties, until within the past five years its adaptability to general planting has become more generally recognized.

In addition to the vigor and hardiness of the tree, it combines the important requisites of good size, beautiful color, and fine quality of fruit. At the same time it is sufficiently productive to render it profitable to the commercial grower. It is somewhat susceptible to the attacks of the apple-scab fungus, but probably less so than any other widely tested variety of the Fameuse group. The fruit keeps until midwinter in the North in cellars, and, so far as tested, endures excellently in refrigerated storage. The specimen shown on Pl. XLVII was grown in the orchard of the New York State Agricultural Experiment Station at Geneva, N. Y., and is fairly representative of the variety as received at the Department of Agriculture from growers in a wide range of territory. Excellent specimens of it have reached the office of the Pomologist, in the ordinary course of correspondence, from Maine, New Hampshire, Vermont, Connecticut, Rhode Island, New York, Ohio, West Virginia, Wisconsin, Nebraska, and Montana, as well as from the Province of Ontario, in Canada. As a market sort, it is considered worthy of distinct recognition as a dessert apple, adapted to the requirements of the fancy fruit trade in the larger cities, ranking with Jonathan, Grimes, Esopus, and Northern Spy in this respect. As this trade requires fruit of fine quality, free from blemishes caused by diseases and insects, it is advised that planters of it be prepared to spray their trees thoroughly, and to pick, pack, and handle their fruit with special care in marketing. It appears to be especially adapted to marketing in boxes or other small packages in retail trade.

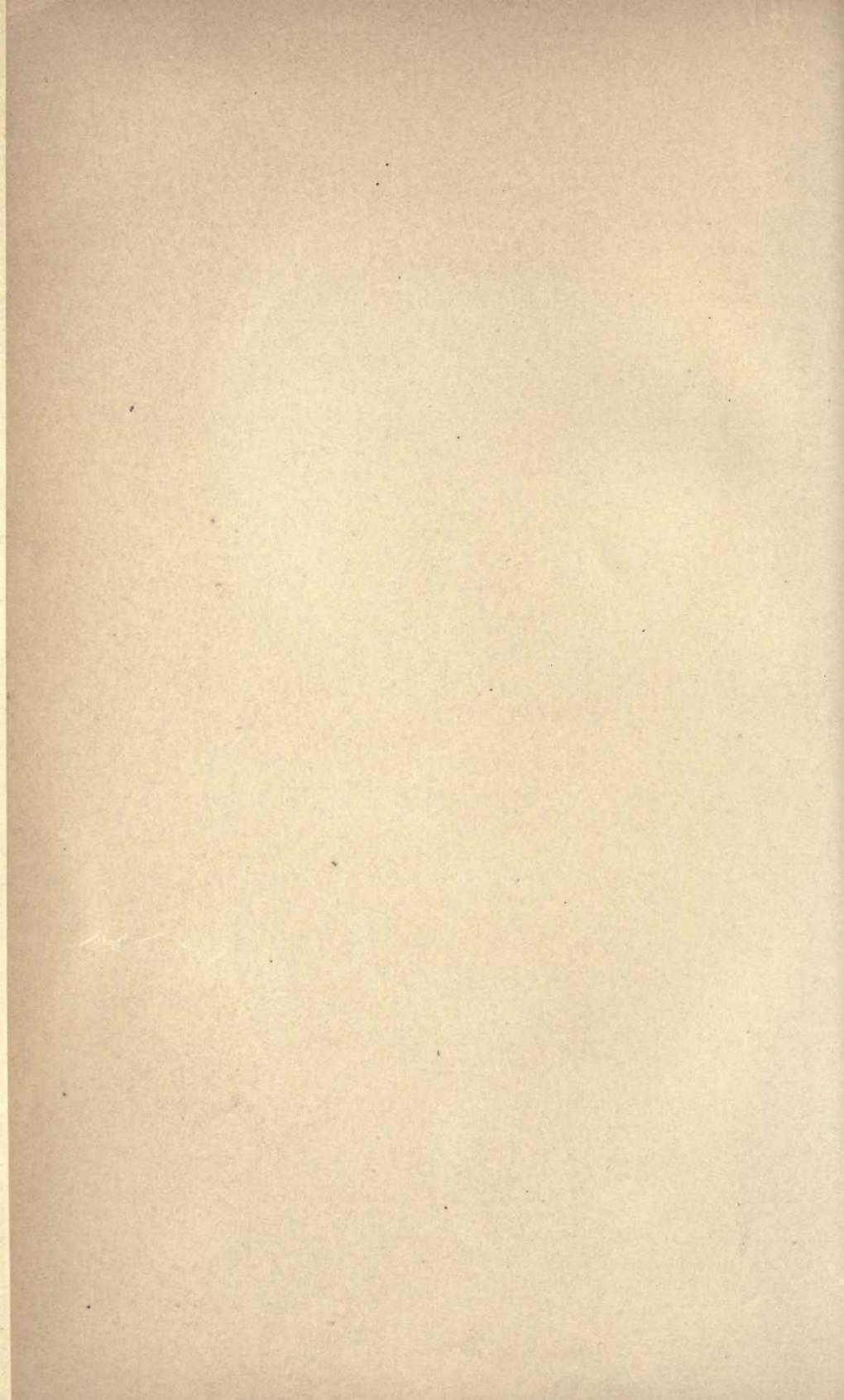
DESCRIPTION.

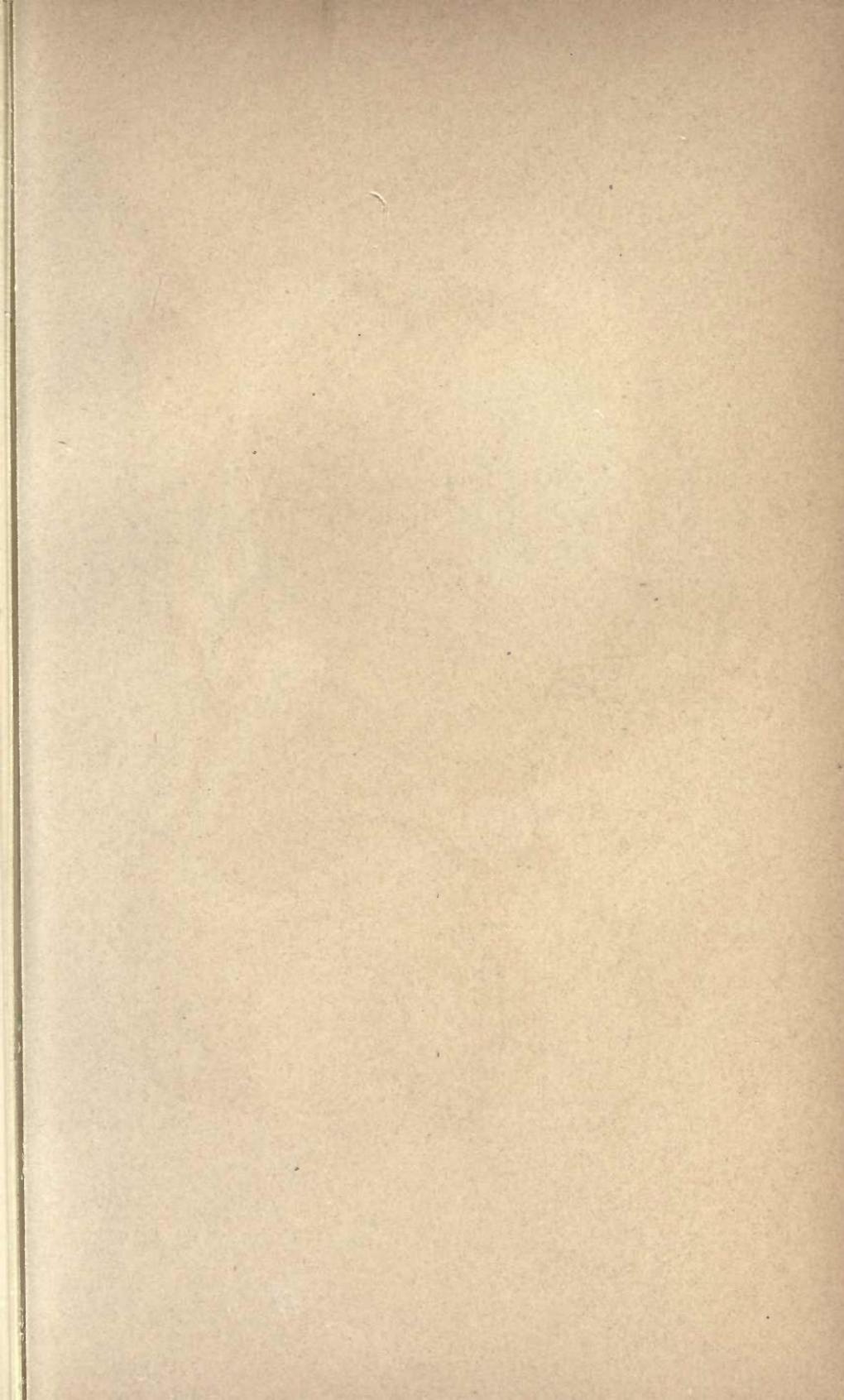
Form roundish, sometimes slightly oblate; size medium to large; surface smooth, sometimes slightly russet veined; color yellow, washed over most of the fruit with light crimson, frequently dashed with broken stripes of dark crimson and covered with a heavy bloom, which renders the ripening fruit very conspicuous on the tree; dots russetted, prominent, of variable size; cavity regular, deep, flaring, smooth; stem short to medium, downy, stout, fleshy at point of attachment to twig; basin regular, of medium size and depth, slightly furrowed; calyx segments medium, reflexed; eye small, closed; skin thin, tough, tenacious; core of medium size, roundish, clasping, open; seeds numerous, plump, brown, of medium size; flesh white, often slightly stained with light red, tender, juicy; flavor subacid, aromatic, highly esteemed

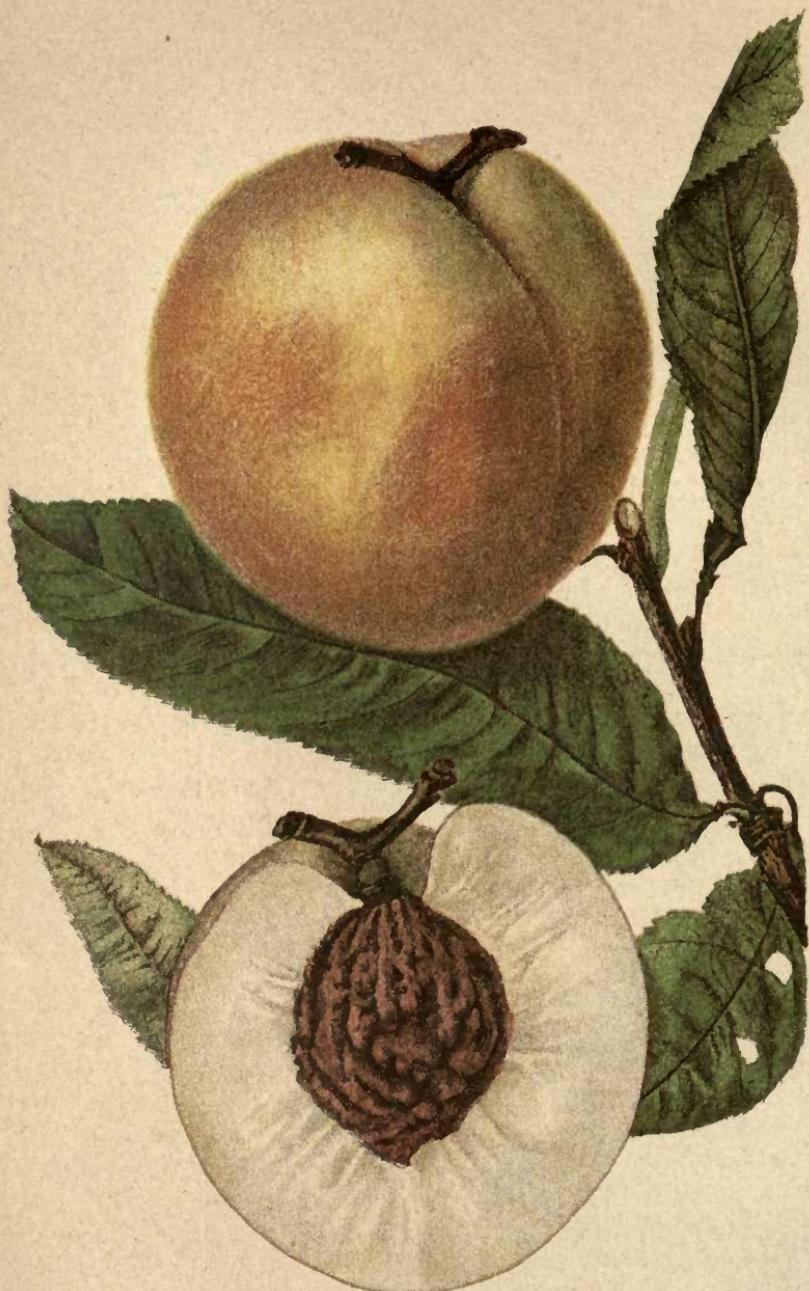


JULIUS HENRICKSON

MCINTOSH APPLE.







D. C. Passmore.

JULIUS BIEN & CO. NY.

CARMAN PEACH.

by those who like the Fameuse and similar varieties; quality good to very good; season December to February in cellar storage in the North.

Tree vigorous, with spreading head, hardy, long-lived, an annual bearer of good crops of fair and handsome fruit. The variety appears to be adapted to the conditions of the Northern States wherever Fameuse (synonym *Snow*) or Baldwin thrive, and to succeed much farther west and south than either of those sorts.

CARMAN PEACH.

(SYNONYM: *Pride of Texas.*)

[PLATE XLVIII.]

Since the introduction of Elberta (about 1880) demonstrated the commercial value of the Chinese Cling group of peaches in the South, there has been much activity among nurserymen and planters in the search for other varieties of this group ripening at different times, through which the shipping season might be extended. Numerous early sorts of this group have been disseminated during the past six or eight years, and are now under test in most of the commercial peach districts east of the Rocky Mountains. Among these, perhaps none is more promising from the standpoint of the commercial grower than the "Carman." This variety originated from planted seed by Mr. J. W. Stubenrauch, of Mexia, Tex., in 1889. The tree fruited first in 1892, and attracted attention both because of its earliness and its freedom from rot, a disease which is exceedingly troublesome on early varieties in that section. Mr. Stubenrauch at once began propagating it for his own planting, and at first named it *Pride of Texas*. Later he changed the name to "Carman," under which designation it was described in the Report of the Pomologist for 1894, p. 25. The description then published was based upon specimens grown by the originator.

DESCRIPTION.

A chance seedling, of the North Chinese type. Size large; broad oval, pointed, somewhat compressed; suture deep near cavity, shallow toward apex; apex fleshy, protruding; surface rather harsh; down short, persistent; color yellowish white, blushed and dotted with red; skin thin, not closely adherent; stone quite large, long, oval, pointed, free; flesh yellowish white, slightly tinged with red at the stone; flavor sprightly, vinous, slightly bitter; season middle of June, in Limestone County, Tex.

Tree reported to be productive, and fruit entirely free from rot; leaves large, with reniform glands; blossoms very large.

Since 1894 the variety has fruited in Texas, Georgia, North Carolina, West Virginia, Delaware, Connecticut, and Michigan, and has

demonstrated its usefulness and adaptability to conditions in all of these States. It ripens somewhat later than "Rivers," and will probably replace that sort in market orchards, as it is of firmer texture and much more resistant to rot.

RED JUNE PLUM.

(SYNONYMS: *Red Nagate*, of some; *Shiro Smomo*, of some; *Nagate no Botankyo*, *Hytankayo*, of some).

[PLATE XLIX.]

Among the more newly introduced Japanese plums that have been sufficiently tested to determine their commercial value in diverse locations, perhaps none has attained to the rank occupied by this early sort. According to Prof. L. H. Bailey, it was introduced from Japan by H. H. Berger & Co. This introduction appears to have been under the name "*Shiro Smomo*," and occurred about 1887. It was also received from Japan by Dr. J. T. Whitaker, of Tyler, Tex., at about the same time, under the name "*Hytankayo*." The variety does not appear to have attracted special attention until about 1892, when trees of it, obtained under the name "*Shiro Smomo*," were fruited by Stark Brothers, at Louisiana, Mo., who were strongly impressed with its value as a commercial sort. They at once propagated it extensively, and introduced it under the name "*Red June*" in 1893. It is a strongly marked variety, ripening in advance of Abundance, and enduring well the vicissitudes of commercial transportation. Though not of high dessert quality in the fresh state, it cooks well and forms an excellent substitute for the damson when canned or preserved. The specimen shown on Pl. XLIX was grown by Mr. George E. Murrell, at Fontella, Va.

DESCRIPTION.

Form roundish cordate, conical, often unequal, with a distinct point; size medium or slightly above medium; surface smooth, glossy, carmine, deepening to dark wine red when fully ripe, and covered with a bluish-white bloom; cavity regular, of medium size and slope; stem of medium length, rather stout; suture usually deep; apex prominent; skin thick, tenacious, slightly bitter; stone oval, pointed, of medium size, tightly adherent to flesh; flesh yellowish, translucent, with yellow veins; rather meaty, though tender and juicy; flavor subacid, pleasant; quality good.

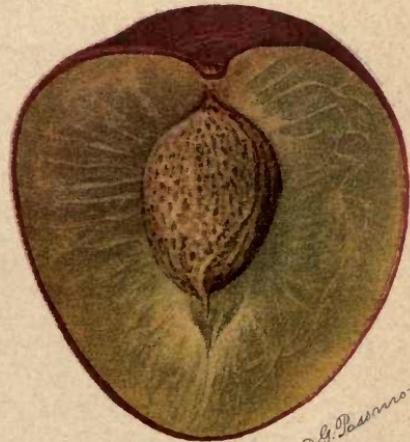
The tree is an upright, spreading grower, vigorous and hardy, producing well in most plum-growing sections, though blooming very early in middle and southern latitudes, and, therefore, somewhat subject to frost injury in spring. It is probably benefited by cross pollination, and should be planted with such varieties as Burbank, Abundance, Chabot, or Satsuma, which Professor Waugh, of the Vermont



RED JUNE



WICKSON



Agricultural Experiment Station, has found to cover most of its blooming period. The variety is hardy in fruit bud when dormant, enduring low winter temperatures, and appears to be promising for the commercial planter in all sections where earliness and resistance to rot are important.

WICKSON PLUM.

(SYNONYM: *Perfection.*)

[PLATE XLIX.]

This variety, one of the first valuable sorts of the Japanese type originated in this country, was grown by Mr. Luther Burbank, of Santa Rosa, Cal., from a seed of Kelsey. The first specimens of this variety received at the Department of Agriculture were furnished by Mr. Burbank under the provisional name "*Perfection.*" in August, 1892, with the statement that the original tree was grown from "Kelsey seed crossed with Burbank pollen." The variety was briefly described under that name in the report of the Pomologist for that year, p. 263. It was commercially introduced by Mr. Burbank in 1893 under the name "Wickson," and was widely distributed in 1894 in the form of grafting wood. Scions top-worked on bearing trees in Michigan fruited largely in 1896, and their fruit surpassed in size and beauty the specimens previously received from the originator. Young trees planted at various points from Georgia to Connecticut and throughout the West have thus far borne rather sparingly, and the fruit has been found quite susceptible to rot in wet seasons. Notwithstanding these defects, the variety is one of much promise and worthy of planting in an experimental way wherever plums are grown. The specimen shown on Pl. XLIX was grown by Mr. George E. Murrell, at Fontella, Va.

DESCRIPTION.

Form oblong conical, sometimes distinctly pointed; size large to very large; surface smooth, glossy, with numerous minute russet dots; color yellow, washed and marbled with dark brownish red, giving it a very rich, variegated effect; bloom thin, transient; cavity rather large, deep, and abrupt; stem rather stout; suture deep at base and distinct to apex; skin moderately thick, tenacious, rather acid; stone oval, of medium size, semiadherent; flesh yellowish, translucent, with yellow veins, firm and meaty when ready for market, but melting and juicy when fully ripe; flavor sweet, rich, aromatic; quality very good.

The tree is very erect, with long and narrow leaves, and the fruit is borne on spurs on the old wood rather than on the strong leading shoots of the previous year, as with most of the Japanese sorts. It is hardy and blooms abundantly, but its productiveness in the Eastern States is yet to be established. It is one of the earliest to blossom, and should probably have such early sorts as Red June, Burbank,

Abundance, and Chabot planted with it for cross pollination. The erect habit of the tree and the peculiar character of foliage have been considered by Bailey and Waugh as evidence that the Simon plum (*Prunus simonii*) entered into its parentage, and there is much to support this view. The writer sees no reason to doubt that Kelsey was the seed parent, however, as stated by the originator, both in correspondence and in his original description of the variety.

This tree has been largely planted in certain localities in California, and the fruit of it grown in that State has been found to bring very high prices on the Eastern markets in the fresh state.

DOWNING GRAPE.

(SYNONYMS: *Charles Downing*; *Ricketts No. 1.*)

[PLATE L.]

Most of the native grapes thus far developed have been found deficient in keeping quality. In this respect they are distinctly inferior to many varieties of *Vitis vinifera* grown in the Old World and upon the Pacific coast. One of the most notable exceptions is the Downing, which originated with Mr. James H. Ricketts at Newburgh, N. Y., about 1870, as a hybrid of Isabella and Muscat Hamburg. It first attracted public notice in 1873, when it was exhibited at the Boston meeting of the American Pomological Society, and again in 1875, when it was examined with other seedlings on the grounds of the originator by a committee of the American Pomological Society, composed of J. J. Thomas, Charles Downing, and Patrick Barry, and favorably reported on¹ under the designation "*Ricketts No. 1.*" It was subsequently named "*Charles Downing*" by Mr. Ricketts in honor of his neighbor, the distinguished pomologist. It was introduced by Mr. J. G. Burrow, of Newburgh, N. Y., in 1883, and considerably disseminated among amateurs. It has not attained prominence as a market sort. The cluster described and illustrated on Pl. L was grown by Mr. C. C. Corbey, at Montclair, N. J.

DESCRIPTION.

Cluster large to very large, moderately loose, sometimes shouldered; berry medium to large, roundish oval; skin rather thick; color brownish black with a thin, light bloom; flesh tender, breaking, juicy; seeds of medium size, two or three to the berry; flavor mild, sweet and sprightly; quality very good; season late; an excellent keeper and shipper.

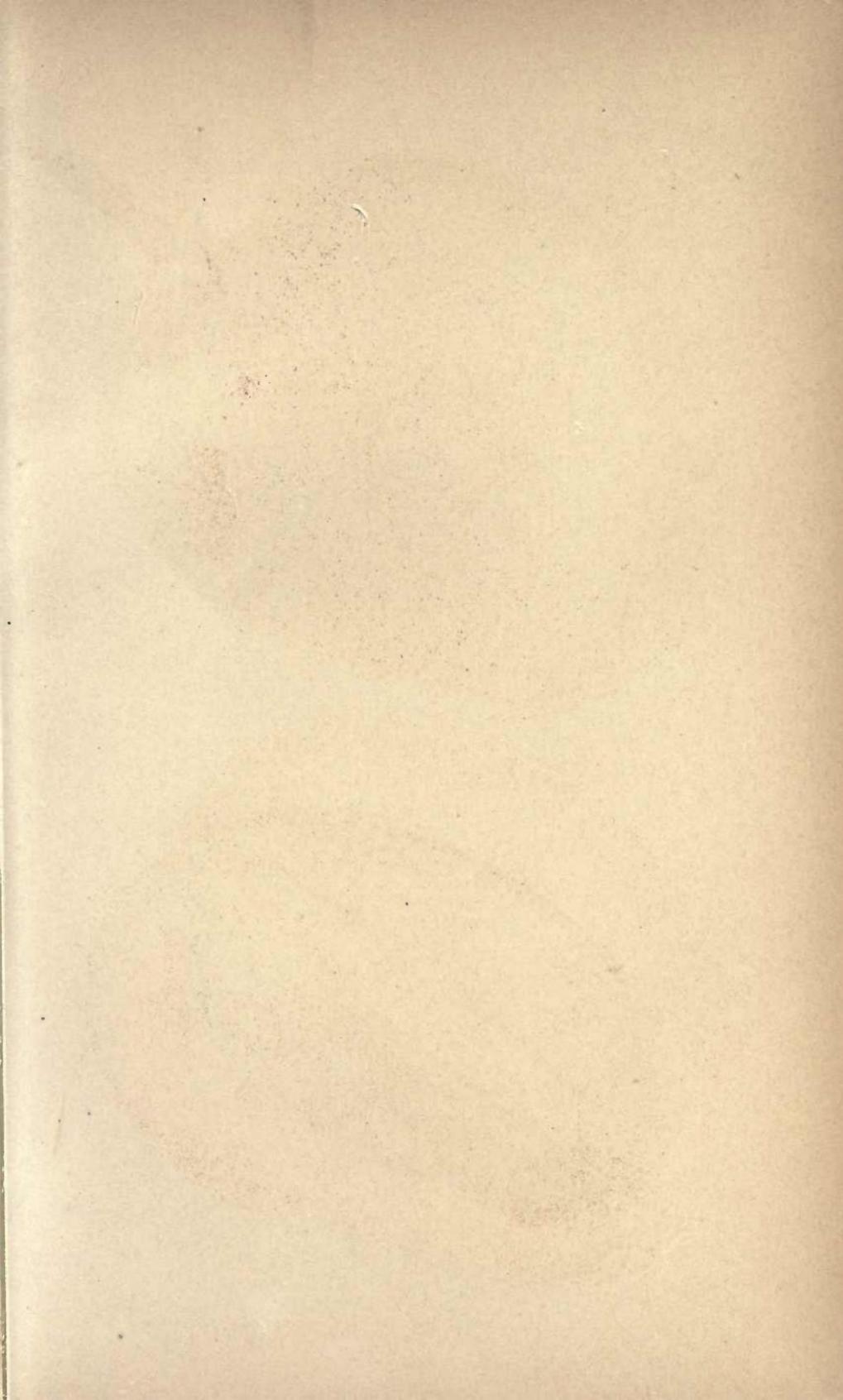
The vine is a vigorous grower with healthy foliage. It is somewhat subject to mildew in unfavorable seasons, and should be thoroughly sprayed whenever that disease is prevalent.

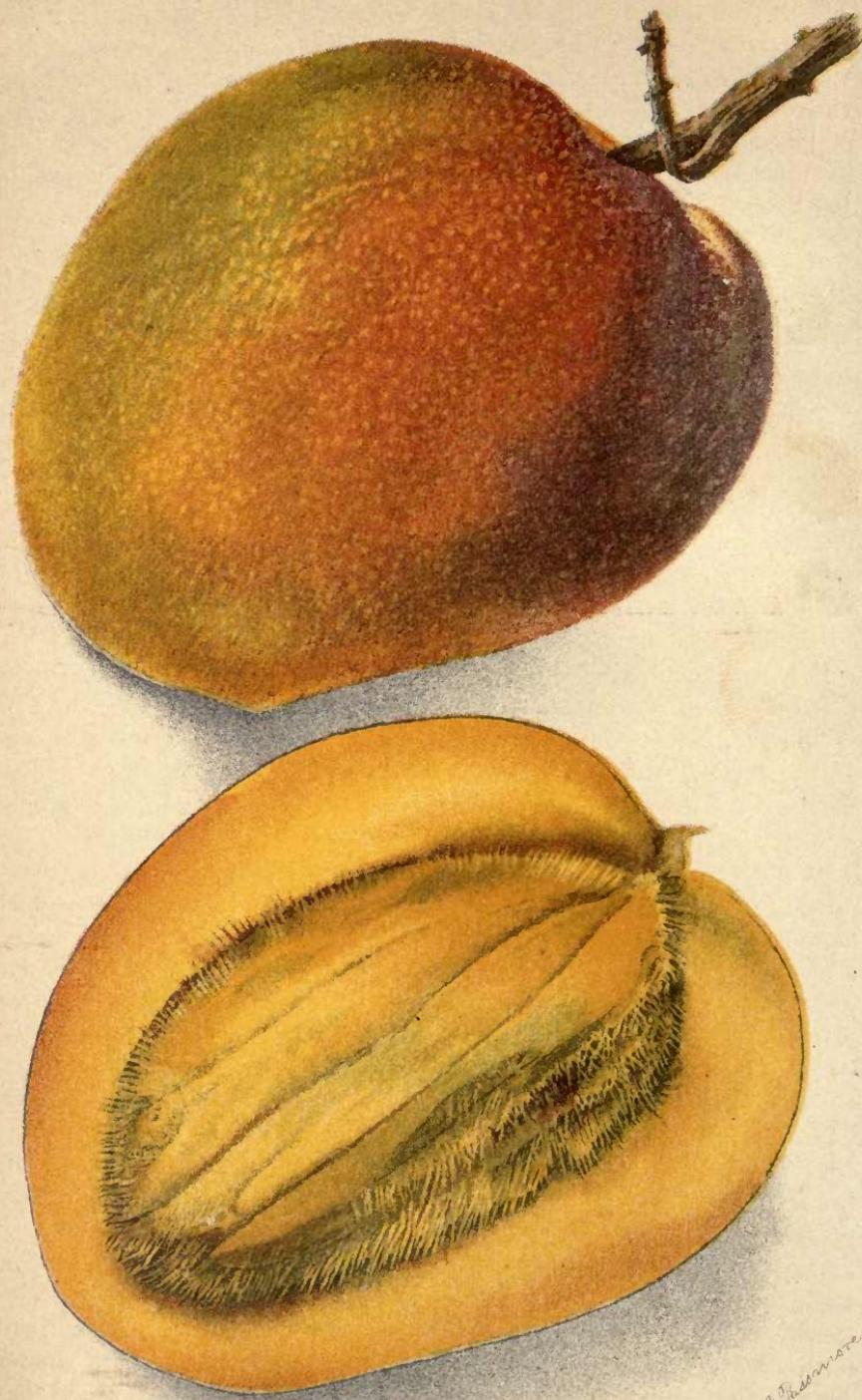
¹ Proc. Am. Pom. Soc., 1875, pp. 112-114.



DOWNING GRAPE.

JULIUS BIENA CO NY





MULGOABA MANGO.

JULIUS BIEN & CO. INC.

Though sufficiently hardy for the important grape districts of the East, it will probably be advisable to take down the vines from the trellis to afford partial protection in severe winters. Like other grapes of fine quality, the vine should not be permitted to overbear when best results are desired. As a grape for amateurs it is commended as one of rare beauty and superior excellence; also as one of the most promising sorts for the grower who supplies a special trade that demands and is willing to pay for fruit of fine quality.

MULGOBA MANGO.

[PLATE LI.]

The mango is, comparatively speaking, one of the more recent introductions from the Old World. It is native in India and elsewhere in southern Asia. It did not reach Europe until 1690, when it was introduced to cultivation in hot houses in England. It is reported to have reached the West Indies from Brazil about the middle of the eighteenth century, and Jamaica in 1782, where it soon became naturalized. It appears to have reached Florida first at Indian Key, where it was introduced by Dr. Perrine in 1840, but these plants failed to survive the neglect that followed the murder of that enterprising horticultural pioneer by the Indians in May of the same year.

It was again introduced, probably from Jamaica, about 1870, at Point Pinellas, and a third time, in 1877, in the same locality, by Mr. William P. Neeld. The rapid growth, precocity, and productiveness of the trees grown by Mr. Neeld, together with the high prices obtained for the fresh fruit, both for home use and shipment, resulted in large plantings throughout central Florida.

Single trees but 6 years old from the seed are reported to have yielded upward of \$50 worth of fruit in a season, and in one instance two seedling trees 8 years old bore a crop estimated at 19,000 fruits. The freeze of January, 1886, checked the rapid expansion of mango plantations, however, as it killed to the ground practically all the mango trees north of the Caloosahatchie River. Sprouts from the old trees and young seedlings rapidly came into bearing, so that there was a considerable annual production of fruit from about 1890 to 1894, inclusive. The disastrous freezes of December, 1894, and February, 1895, proved fatal to most mango trees north of the Caloosahatchie River and Lake Worth, however, and since then production and planting have been chiefly limited to the region below these points.

During the earlier years of cultivation in Florida little effort was made to perpetuate choice varieties, except through seedlings. The species is propagated with difficulty by budding and grafting, and not until recently have the details been mastered sufficiently to render commercial propagation possible. In India, where the species has been grown under cultivation for centuries, inarching is practiced, but

the trees propagated in this way appear to be generally weak and short lived because of the imperfect union of stock and scion that commonly results. In Jamaica and elsewhere in the West Indies little progress has been made in propagating by any other method than the growing of seedlings, though a few trees of several choice varieties have been successfully inarched.

Prior to 1889 none but seedling mango trees were grown in Florida. In that year an importation of eleven grafted or inarched trees of five varieties was received from Bombay, India, by the Division of Pomology, and placed with fruit growers on Lake Worth, in Florida, for testing. The trees were in poor condition on arrival, and through gradual deterioration and the effects of the freeze of February, 1895, all save one perished before maturing fruit. The surviving tree, a Mulgoba, quickly recovered from the effects of the freeze, and has borne regular annual crops of fruit of very superior quality since 1898. Its introduction marks the beginning of systematic, rational mango culture in the United States. Recent experience indicates that the mango can be successfully grafted in Florida, and the variety is now quite generally distributed along the lower east coast, where it appears to thrive. The specimen illustrated was from the original imported tree now standing on the grounds of Prof. E. Gale, at Mangonia, Fla.

The success of Mulgoba since it has become established in Florida, and the marked improvement in the methods of propagating this fruit by budding and grafting, should encourage judicious effort to introduce other choice varieties of the mango that have long been known to exist in India. Several of these are considered of greater value than Mulgoba, some because of their greater productiveness, others because of their superior quality, and still others because of their earlier or later ripening.

While the efforts to grow this fruit in California have hitherto not resulted in the production of fruit of choice quality, it seems not improbable that through the introduction of early ripening varieties, mango culture may yet be successfully established in the frostless thermal belts of the southern portion of that State.

DESCRIPTION.

Form roundish, oblique, reniform; size large, weighing from three-fourths pound to 1 pound; surface smooth and undulating; color yellow, beautifully blushed with red and faintly dotted with numerous brown dots; skin thin, tough, tenacious; seed reniform, oval, rather large; fiber scanty, fine, and tender; flesh rich, apricot yellow, very tender, melting and juicy, sweet, rich, fragrant; quality very good.

The Mulgoba surpasses in flavor and quality the seedlings previously grown, but its most distinctly marked features of superiority are the

tenderness of flesh and absence of the objectionable fiber and strong turpentine flavor common to most of the seedlings grown in this country.

The tree is a strong, symmetrical grower, and appears to be abundantly productive. It is considered worthy of experimental planting in eastern Florida, south of latitude 27°, and on the Keys, as well as in the frostless belts of southern California and in the new tropical island possessions.

ADVANCE LOQUAT.

[PLATE LII.]

The loquat (*Eriobotrya japonica*, formerly known as *Photinia japonica*) is a Japanese evergreen tree that promises to attain commercial importance in the milder portions of the United States. It was introduced into England in 1787, and soon thereafter became a popular garden fruit in the Mediterranean region. The exact date of its introduction into the United States is not recorded, but it has long been grown in the Gulf States, frequently under the erroneous names "Japan Plum" and "Japan Medlar." More recently it was introduced into California. The species is sufficiently hardy to endure ordinary winters on the Atlantic slope as far north as Washington, though it succumbs to the lower temperatures that usually occur at intervals of a few years, except in specially favored localities. The fact that it blossoms late in autumn and does not ripen its fruit until about April or May will probably prevent it from attaining economic importance north of the Gulf States. In the form of seedling trees it has been grown in considerable areas near the larger towns in Florida and near New Orleans, La., for many years, the delicate texture of the ripe fruit having restricted it almost entirely to near-by markets until recently. With the improved methods of transportation now in use, however, there appears to be no reason why the fruit should not be safely transported across the continent and placed before the consumer in good condition.

The seedlings of the loquat show wide variation in size, form, and flavor of fruit, as well as in the relative proportion of seed to flesh, and rapid improvement by selection has long been recognized as possible. Until recently, however, there appears to have been but little systematic work along this line. In fact, there appears to have been little effort to perpetuate choice seedlings by grafting in this country until about 1888, when a variety known as "Giant" was introduced from Japan by H. H. Berger & Co., of San Francisco, Cal., in the form of grafted trees. The species belongs to the Rose family, and unites more or less freely with pear, quince, and hawthorn stocks, though in this country loquat seedlings are most commonly used to bud and graft

upon. In California budding is more commonly practiced, using seedling loquats about 9 months old, and approximately 1 inch in diameter. Buds are tied in with paraffin cloth. The stocks are cut back about three weeks after budding, leaving three or four leaves, until the bud has made from 4 to 6 inches of growth, when it should be cut close to the inserted bud and waxed over.

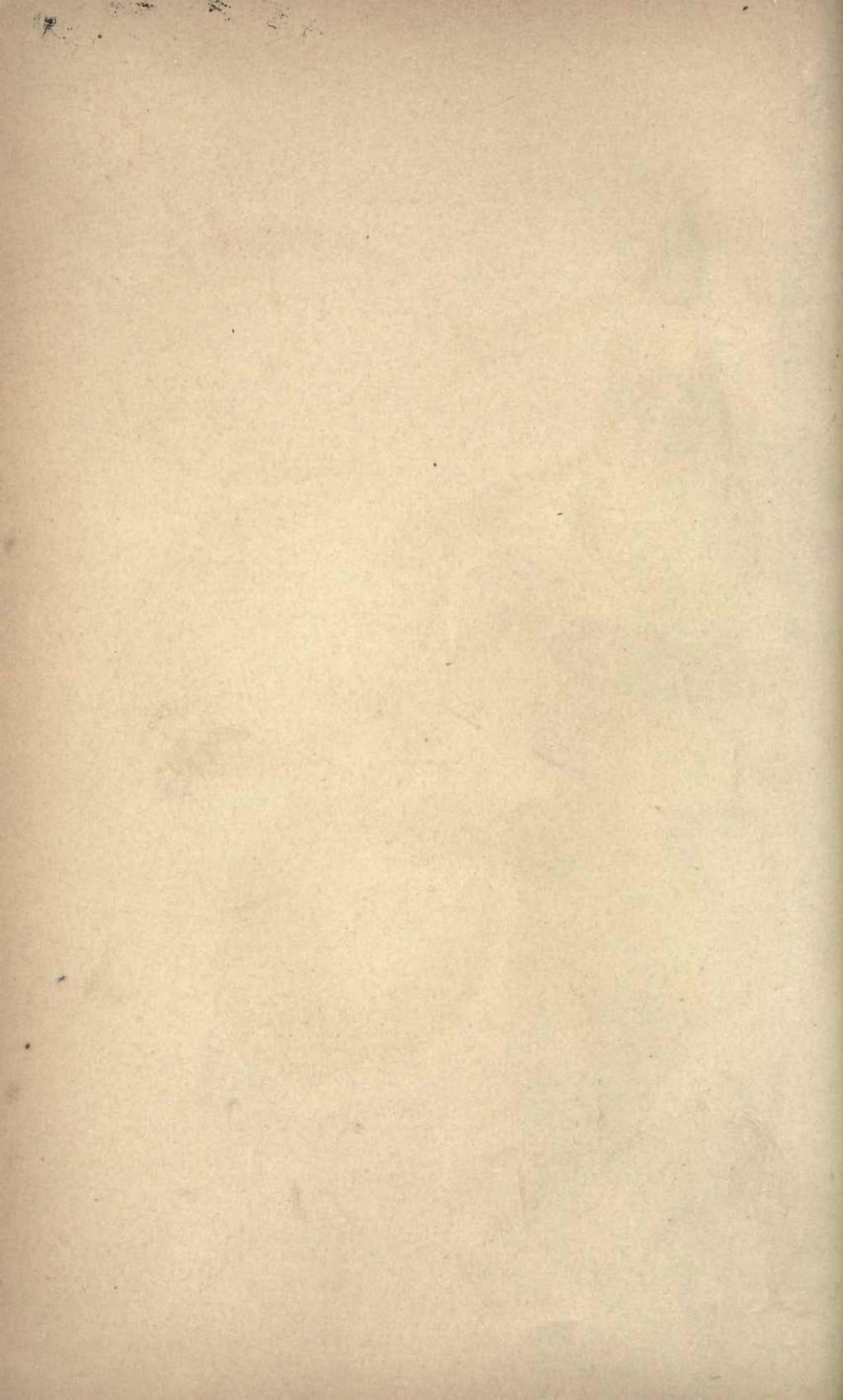
Perhaps the most successful originator of varieties of the loquat in this country thus far is Mr. C. P. Taft, of Orange, Cal., whose seedlings have attracted wide attention. One of the best of these, the "Advance," is illustrated on Pl. LII, from specimens grown by Mr. Taft. It is a very large loquat, about three times the size of the ordinary seedling, and double the size of the "Giant." The fruit is borne in very large terminal clusters, and is of refreshing, subacid flavor, with less than the usual proportion of seed to flesh. It endures shipment well, having been successfully forwarded from southern California to Chicago, New York, and Washington. It is commended for experimental planting in the Gulf States and the warmer valleys of California.

In recent years there has been much interest in the Mediterranean region in the improvement of this fruit. Experimenters in Italy and Algeria have produced seedlings said to vary very greatly in size, quality, and proportion of seed to flesh. As a number of their best varieties have recently been secured through the Section of Seed and Plant Introduction, a considerable increase in the commercial planting of this wholesome fruit may reasonably be expected in the near future.



D. G. Passmore

JUJUUS BIEN & CO. N.Y.



M. F. Johnson

17

MF

PROMISING NEW FRUITS

BY

WILLIAM A. TAYLOR,

Pomologist in Charge of Field Investigations, Bureau of Plant Industry.

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PROMISING NEW FRUITS.

By WILLIAM A. TAYLOR,

Pomologist in Charge of Field Investigations, Bureau of Plant Industry.

INTRODUCTION.

Among fruit growers interest in new fruits is perennial. The high prices at which judiciously advertised novelties in nursery stock are sold in large numbers each year testify to this. And while a large proportion of the sorts that receive wide notice from year to year drop out of sight soon after the self-interest of the introducers ceases to keep them before the public, many find lasting places of usefulness in localities where their special adaptability to local environment is proved by test. It is therefore well that new sorts shall continue to be tested by fruit growers from time to time, even in advance of their commercial introduction, for in no other way can rapid, continuous improvement in the character of the fruits of any region be accomplished.

Improved cultural treatment, including judicious fertilizing, tilling, pruning, and spraying, may accomplish much, but the best attention to any or all of these points fails to secure the desired economic end of largest yield and highest quality at least cost of labor, time, and money unless the effort is made upon varieties adapted to the local environment and which yield fruit suited to the purpose for which the product is to be used.

It is therefore advisable for growers to keep themselves informed regarding the more promising varieties of the fruits in which they are personally interested, and especially such as give evidence of having attracted attention through inherent merit, rather than through lavish praise by originators or introducers, for it is usually among such that the permanent improvements over previously existing varieties are found. A few fruits of this character that have reached the office of the Pomologist recently are described and illustrated in this paper.

The newness of some of the fruits mentioned rests rather upon the fact that they have hitherto had only local or, at most, restricted reputation, than upon recent origin. But they are believed to be none the less promising to the general fruit grower on that account. The fact of long test of such sorts in the localities of their origin or

restricted distribution is, in truth, their strongest claim to recognition, and it is because of this that they are suggested to growers as worthy of testing in other and larger fields.

STAYMAN WINESAP APPLE.

(SYNONYMS: *Stayman's Winesap; Stayman.*)

[PLATE LVII].

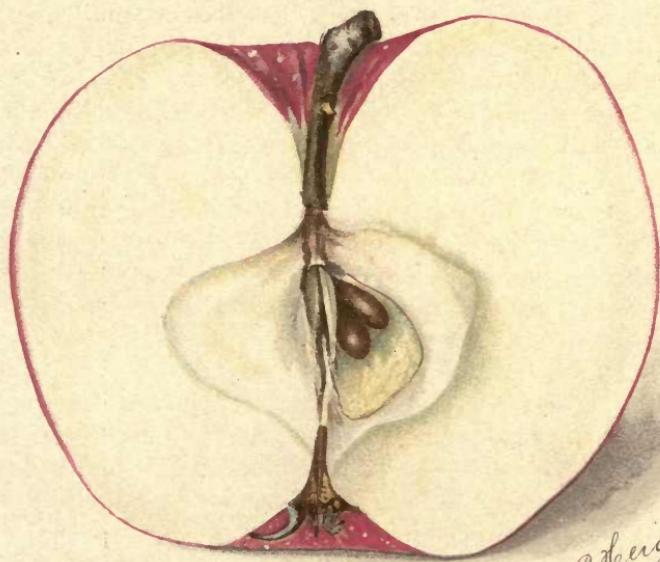
The Winesap apple has from a very early day been one of the most popular winter varieties, for both home use and market, in that great belt of country which extends from New Jersey, Virginia, and North Carolina to Arkansas, Kansas, and Nebraska. In more recent years it has assumed commercial importance at many points in the Rocky Mountain region and on the Pacific slope. Even before apples were grown for sale as fruit to any extent in the region in question it was prized as a cider variety. Thus, its standing as a cider fruit was recognized by Dr. James Mease in the first American edition of Willich's Domestick Encyclopedia, which was published at Philadelphia in 1804. In this work Dr. Mease, in his list of "Cyder apples," describes the Winesap as follows:

WINE-SOP.—An autumn fruit, of deep red colour, and sweet, sprightly taste; makes excellent cyder, which is preferred by some to that of Red Streak;^a cultivated by Samuel Coles, of Moore's-town, New Jersey.

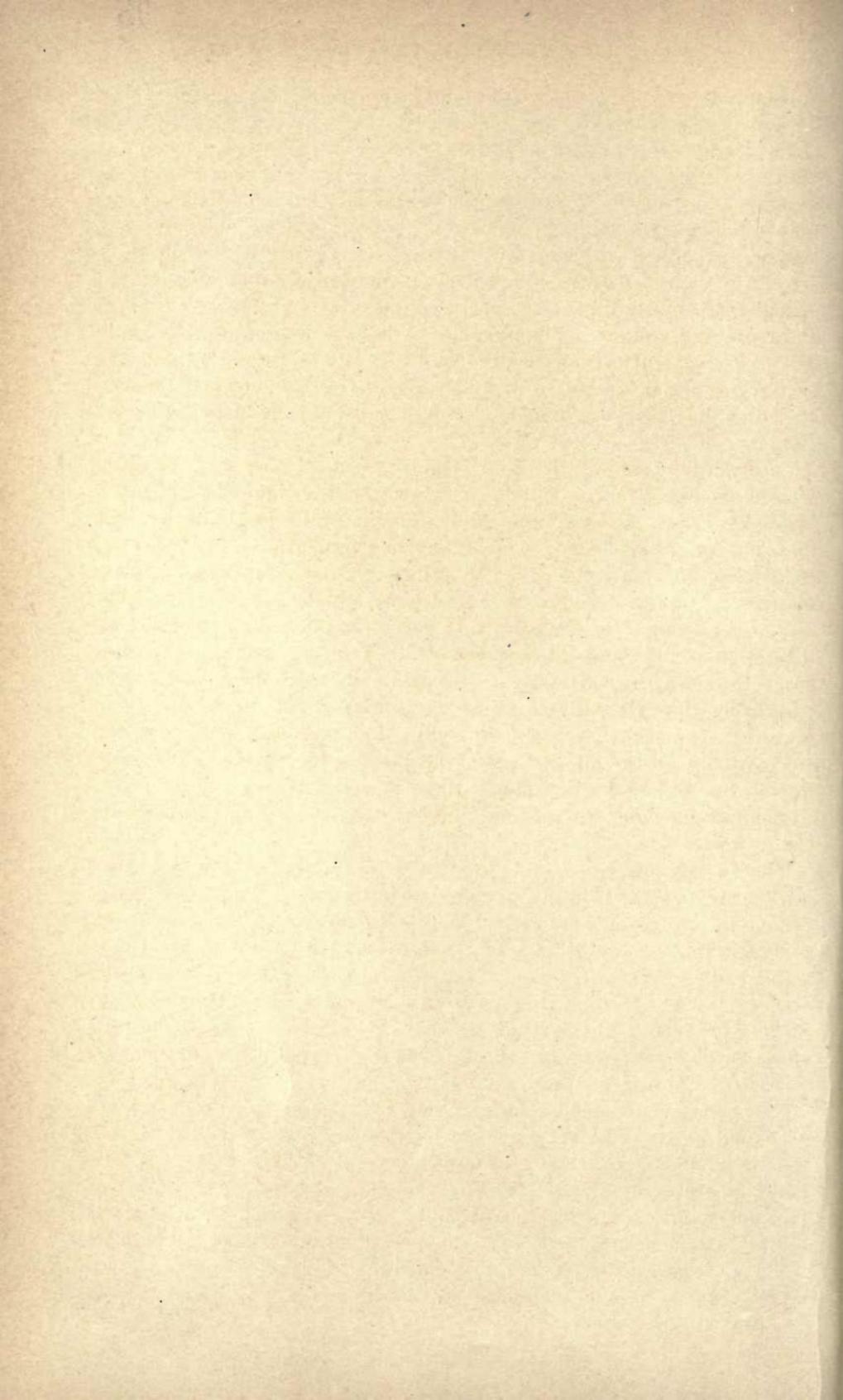
Dr. Mease's account is worthy of special notice from the fact that it was, in the language of the author, "the first attempt ever made to collect into one view a list of the finest kinds of apples growing in the United States." This antedated by thirteen years Coxe's "View of the cultivation of fruit trees," published also in Philadelphia, in 1817, which has usually been considered the beginning of systematic pomology in America. Dr. Mease's observations appear to have been chiefly limited to eastern Pennsylvania and New Jersey, but fortunately included the collection of William Coxe at Burlington, then about ten years established, as well as several others of that region; so that his list includes the earliest known descriptions of about forty varieties of apples that are still grown, in addition to a number that are probably not now in existence.

Coxe in 1817 described and illustrated the Winesap in his work above noted, and characterized it as then "becoming the most favorite cider fruit in West Jersey." He commended it highly on the score of its productiveness, but noted its unsatisfactory habit of growth, which still remains its chief defect as an orchard tree. Nothing appears to be known regarding its time and place of origin. Neither Mease nor Coxe refers to these points. It has been assumed by

^a Red Streak was one of the famous English cider apples grown in this country at that time.



STAYMAN WINESAP APPLE.



subsequent writers that it originated somewhere in western New Jersey at some time prior to the year 1800.

As would be expected, a variety with so many strongly marked characteristics, grown under such varied soil and climatic conditions as are found from the Atlantic to the Ozarks, has left a marked impress on the pomology of this great region. It is a singular fact, however, that so far as known nearly all of those newer varieties which show strong evidence of Winesap parentage have originated west of the Allegheny Mountains. Among these may be mentioned Kinnard, Paragon, and Gilbert, of Tennessee; Arkansas (synonym *Mammoth Black Twig*) and Arkansas Black, of Arkansas Howsley; and the several seedlings grown by Dr. J. Stayman, of Leavenworth, Kans., of which last the Stayman Winesap has been most widely disseminated.

During the past six or eight years Stayman Winesap has been widely discussed by commercial fruit growers throughout the Eastern United States. According to the statement of its originator, it was one of a lot of seedlings grown at Leavenworth, Kans., in 1866, from seed selected from a choice lot of Winesap apples grown in the same county. About a dozen of the most promising seedlings of the lot, as judged from foliage and wood, were transplanted to permanent locations in 1868 and allowed to attain fruiting age. When they came into bearing, so large a proportion of them were considered promising that Dr. Stayman sent out scions of several to parties in Kansas, Minnesota, New Jersey, Ohio, Pennsylvania, and Virginia for testing. Of the lot, at least three, besides the Stayman Winesap, appear to possess distinct merit, the others having been more or less disseminated under the designations Stayman Nos. 1 and 2 and Stayman Sweet.

The variety described and illustrated in this paper first produced fruit in 1875, and the first published description of it appeared under the name "Stayman's Winesap" in Charles Downing's third appendix to the second revised edition of "Fruits and fruit trees of America," published in 1881. Dr. Stayman also published a description of the variety in the Annual Report of the Missouri State Horticultural Society for 1883. The original tree of this variety was destroyed by a storm several years ago, but those of the other seedlings were reported to be still standing in January, 1903.

Further than these descriptions the variety does not appear to have attracted any special attention until after 1890, when its good qualities were discovered almost simultaneously by Mr. R. J. Black, of Bremen, Ohio, and Mr. J. W. Kerr, of Denton, Md., both of whom fruited it on top grafts at about that time. It was first catalogued by the latter in 1894-1895, and has been quite extensively planted in New Jersey, Pennsylvania, Delaware, Maryland, and Virginia since that date, and somewhat in other States. Its chief merits

are its exceptionally vigorous growth of root and top, its large and luxuriant foliage, which enables the tree to carry its full crop up to maturity, and the excellent quality of the fruit, superior in this respect to that of its parent. The only particular in which it does not equal the parent is in its color, which is somewhat less brilliant than that of the old variety. The fruit is sometimes subject to barrel scald in storage when picked before reaching full maturity, being quite similar to the parent in this respect. Taking all important points into consideration, the Stayman Winesap appears to be adapted to a wider range of soil and climate than its parent and to be well worthy of testing, both for home use and market, throughout middle latitudes.

The specimen shown on Pl. LVII was grown by Mr. J. W. Kerr, at Denton, Md., and is fairly representative of the variety as it grows on the Chesapeake Peninsula.

DESCRIPTION.

Form roundish conical, with some specimens slightly oblique; size medium to large, averaging considerably larger than Winesap; surface smooth; color greenish yellow, washed and faintly striped with rather dull mixed red, thinly splashed and striped with crimson; dots numerous, russet, many aureole; cavity regular, large, deep, russetted; stem short, rather stout; basin regular, small, shallow; calyx segments long, narrow, converging, reflexed at tip; eye of medium size, closed; skin moderately thick, tenacious; core oval, small to medium, moderately open; seeds numerous, plump, brown, of medium size; flesh yellowish, moderately fine-grained, breaking, juicy; flavor sprightly subacid, good to very good. Season winter, keeping well in common storage and apparently well adapted to cold storage.

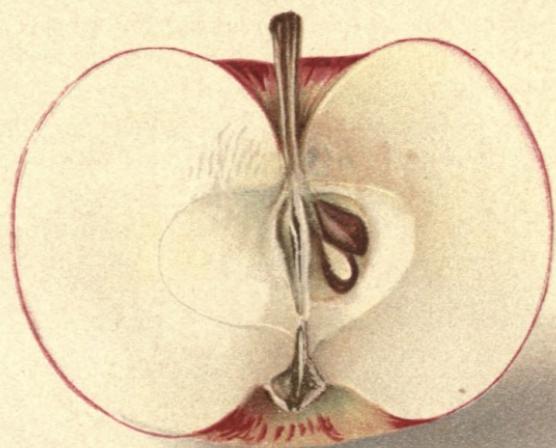
The tree is a strong, moderately upright grower, with dark wood and large, healthy foliage. It promises to be much longer lived than the parent, and is apparently adapted to regions somewhat farther north than the old Winesap is known to succeed.

RANDOLPH APPLE.

(SYNONYM: "Unknown.")

[PLATE LVIII.]

Among the varieties of summer apples tested in the experimental export shipments conducted by the Department of Agriculture in 1902, one of the most promising sorts for long-distance shipment was the Randolph. The origin of this variety is not known, its history, so far as ascertained, being as follows: When the late Randolph Peters, of Wilmington, Del., bought the farm near Farnhurst, Del., where he established a nursery about 1869, he found upon it an apple orchard. In this orchard there were one or more trees of a summer apple not recognized by him, which impressed him with its value as a commercial variety because of its firm flesh, sprightly flavor, and



D. G. Passmore

brilliant color, yielding fruit uniformly fair and smooth. Supposing it to be an old variety, he sent specimens for identification to various pomologists, including the late Charles Downing. None of the experts recognized the variety, and Mr. Peters, considering it worthy of dissemination, dubbed it "Unknown," and offered it for sale in his catalogue as early as 1884 under that name. From this nursery it was quite widely introduced, and in recent years has attracted attention in Nebraska, Arkansas, Maryland, and Delaware, being most widely grown in a commercial way in the last-mentioned State. One of the first to recognize its merit after it was distributed by Mr. Peters appears to have been Mr. H. T. Vose, of West Point, Ark., then of Otoe County, Nebr. Mr. Vose states that he solicited and obtained the consent of the introducer to name it "Randolph," in honor of the discoverer.

While not of the highest dessert quality, the Randolph is a good eating apple of mild flavor, distinctly better than most varieties of its season, with a firmness of texture and brilliance of color that render it one of the best summer varieties for long shipment by either rail or sea. Mr. Vose reported it in 1895 as the most vigorous grower in his collection of sixty or more varieties, and an early, annual bearer, ripening about two weeks later than Red June. The fruit sets singly or rarely in pairs on the fruit spurs, and as it does not overload, its crop is more even in size than varieties that set their fruit in clusters.

On Plate LVIII is illustrated a specimen grown by Mr. Thomas O. Duvall, Spencerville, Montgomery County, Md., in 1902.

DESCRIPTION.

Form oblate, very symmetrical; size medium to large; surface smooth and glossy; color creamy white, washed with crimson and beautifully striped with darker crimson; dots few, gray, indented; cavity regular, of medium size and depth and gradual slope, striped and russeted; stem short to medium, rather stout; basin regular, of medium size and depth and abrupt slope, slightly furrowed; skin thick, tenacious; core medium, oblate conic, partially open, clasping the eye; seeds plump, brown, medium, numerous; flesh yellowish, with a satiny luster, moderately fine-grained, very firm, breaking, moderately juicy; flavor mild subacid, good. Season second half of July in Delaware and tide-water Maryland.

The tree is a vigorous grower, with brownish wood and light dots. It is regularly and sufficiently productive.

The variety is considered by Mr. Duvall the most profitable summer apple of his section in Maryland, and from its behavior in the experimental export shipments referred to it is considered well worthy of testing as a commercial summer apple throughout the country.

PHILOPENA PEAR.

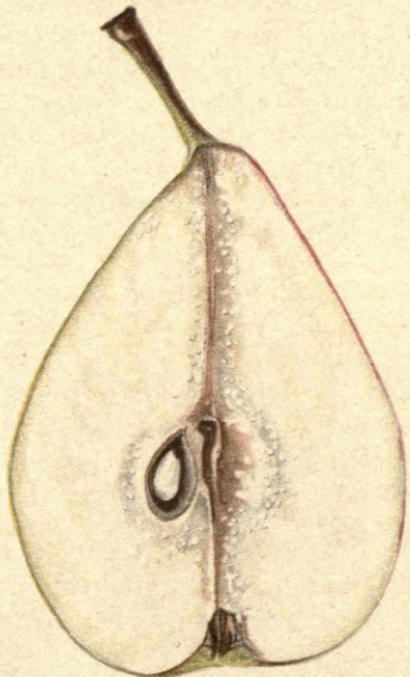
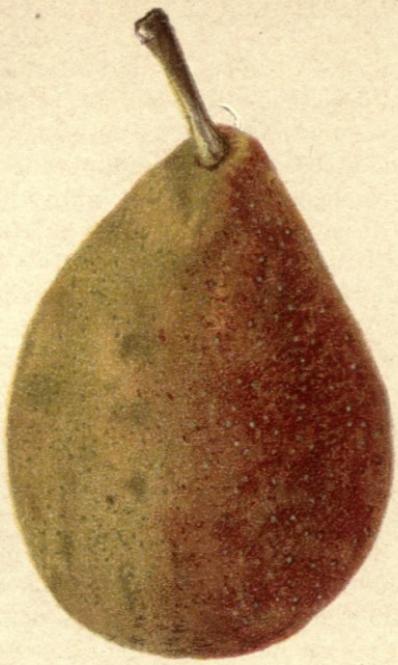
[PLATE LIX.]

To the regret of pear lovers who appreciate varieties chiefly, if not solely, for their flavor and quality, the trend in American pomology in recent years, as judged by the character of varieties introduced, has been toward superficial beauty, size, and productiveness rather than toward marked improvement in dessert quality. The necessity for varieties resistant to diseases affecting foliage and fruit has played an important part in fostering this tendency. This is especially true as regards the disease known as pear blight, to which many of the finer sorts have succumbed in the South, and which renders the culture of pears an uncertain undertaking in the Middle States, especially in the great Mississippi Valley. It is unfortunate that the planting of a number of the finer dessert sorts has practically ceased in the regions mentioned, their places having been taken by the more vigorous and resistant varieties of the Oriental type, none of which has yet developed high dessert quality.

The fact that Seckel and a few others of the European type have persisted here and there throughout the region in question, where Bartlett, Clapp Favorite, Flemish *Beauty*, and other popular sorts have succumbed, has given rise to the hope, among some growers, that through the agency of seedlings of these more resistant sorts varieties may ultimately be developed that will be sufficiently blight resistant to endure the existing conditions and at the same time retain the high quality of the parent varieties.

Among the most promising varieties in this respect is the Philopena, shown on Pl. LIX. Its record well illustrates the vicissitudes that frequently attend the early history of fruit varieties which subsequently prove their value through the possession of some strongly marked characters.

The essential facts, as related by Mr. W. H. Ragan, are as follows: In 1843 the late Joshua Lindley, who had for some years conducted a nursery at Monrovia, Ind., closed out his stock preparatory to returning to his former home in Guilford County, N. C. The late Reuben Ragan, of Putnam County, Ind., purchased part of this stock. Among it was a long-bodied seedling pear tree, in which was a dormant bud of the Aremberg (synonym *Beurre d'Aremberg*) pear. As the latter was a rare and high-priced variety in the region at the time, this tree was given special attention by the owner, with the natural result that a strong and thrifty top was quickly grown from the Aremberg bud. About 1847, during one of those epidemics of pear blight which have repeatedly devastated the trees of the region, the Aremberg top was attacked by the disease and killed down to the seedling stock. Little attention was subsequently paid to the tree until it came into bearing. It was then found to yield a delicious late fall pear of medium size,



PHILOPENA PEAR.

which was named Philopena by the originator some time between 1850 and 1860.

It appears to have been first described in the Report of the Secretary of Agriculture for 1889 (p. 444).

It has been propagated locally in Putnam County, Ind., and disseminated to some extent by distribution to experimenters through the Department of Agriculture. While its parentage is not known, it strongly resembles in certain characters both Seckel and Louise *Bonne de Jersey*.

Pl. LIX shows a fair-sized specimen of this fruit grown on the original tree in 1901, by Mr. R. M. Ragan, at Fillmore, Ind.

DESCRIPTION.

Form oblong pyriform, tapering sharply to the stem; size medium, or slightly below; surface moderately smooth; color dark yellow, lightly russeted, and showing a brownish blush on side exposed to the sun; dots numerous, small, russet; cavity obsolete, stem of medium length, and diameter, obliquely inserted; basin regular, small, shallow, slightly furrowed; calyx segments small, converging; eye small, closed; skin rather thick, tenacious; core oval, of medium size, closed; seeds of medium size, plump, brown, numerous; flesh yellowish, fine-grained, meaty, moderately juicy; flavor sweet and rich; quality good to very good. Season, October and November in central Indiana.

The original tree, now more than sixty years old, is still in thrifty condition, bearing annual crops. It is an upright but rather straggling grower, the young wood having a yellowish-green color. The variety appears worthy of experimental planting throughout the Middle States.

BELLE PEACH.

(SYNONYMS: *Belle of Georgia*; *Georgia*.)

[PLATE LX.]

The Chinese Cling group of peaches has, in recent years, demonstrated its adaptability to a much wider range of climatic conditions than was formerly supposed to be the case. Elberta, the best known variety of this group, has already proved a successful and profitable commercial sort from Georgia and Texas to Michigan and Connecticut. Among the varieties of this group that are less widely known, perhaps none possesses more valuable points than that which was introduced to cultivation by Dr. S. H. Rumph about 1883, under the name "Belle." The variety was afterwards catalogued by many nurserymen as "Belle of Georgia." The name was published as "Georgia" in the catalogue of the American Pomological Society for 1899, the fact that this name had already been published for at least three other varieties having, in the chaotic state of pomological nomenclature, apparently escaped notice.

It is a remarkable fact that Elberta and Belle were grown as seedlings from the same crop of fruit of one Chinese Cling tree in Georgia. The early history of Belle is thus recorded by Powell^a from information furnished by the originator:

Seedling of Chinese Cling possibly crossed with Oldmixon Free. Originated with Mr. Lewis A. Rumph, Marshallville, Ga., from seed from a Chinese Cling tree in the variety orchard of Dr. S. H. Rumph, Marshallville, Ga. The original Chinese Cling tree stood in the center of the variety block near some Oldmixon Free, Oldmixon Cling, Crawford Early, and Crawford Late trees. Mr. L. A. Rumph planted the stone in the fall of 1870 from the same tree, and at the same time S. H. Rumph planted a stone that produced the Elberta.

Though slower than Elberta to attain popularity in the North, Belle is found to endure lower winter temperatures without injury and to be more reliably productive than the former variety in some sections. The only important objection to it, from the commercial standpoint, appears to be its white color, which may render it less popular in markets that prefer yellow-fleshed sorts.

DESCRIPTION.

Form roundish oblong, in the South often tapering to a distinct point, usually symmetrical; size medium to large; surface smooth, soft, and velvety; color creamy white, with a beautiful crimson blush on the side exposed to the sun, sometimes marbled with crimson; down short, adherent; cavity regular, small, shallow, abrupt; suture shallow, except at cavity and apex; apex small and depressed in suture in Northern-grown specimens, frequently large, prominent, and pointed in the South; skin thin, tenacious; stone oval, of medium size, and free; flesh whitish, tinged with red at stone, tender, melting, and juicy when ripe, though sufficiently firm for shipment when picked in advance of full maturity; flavor subacid, rich, and pleasant; quality good to very good. Season, late July at Fort Valley, Ga., late August in northern Virginia and Missouri, beginning to ripen slightly in advance of Elberta, but ending at about midseason of that variety.

Tree vigorous, spreading, rather slender, hardy, and productive. Leaf glands small, reniform; blossoms small.

It is one of the most promising white-fleshed freestones for the commercial peach districts, especially on light and dry soils.

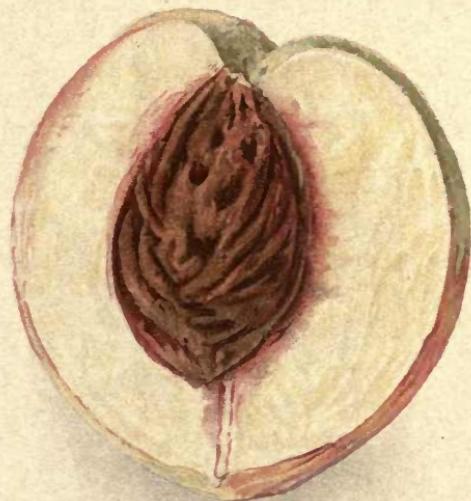
WILLETT PEACH.

(SYNONYM: *Willett's Seedling.*)

[PLATE LXI.]

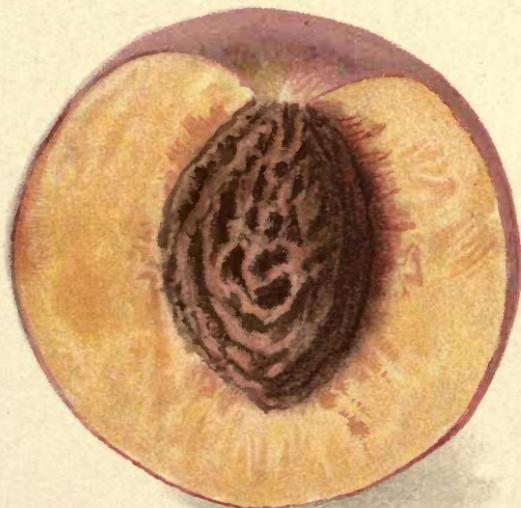
This promising yellow freestone is reported to have originated from a stone brought from some point in South America by the late Cornelius O'Bryan, of "Bryant's Minstrels," who planted it in his garden

^aBulletin No. 54, "The Chinese cling group of peaches," 1902, p. 20, Delaware College Agricultural Experiment Station.



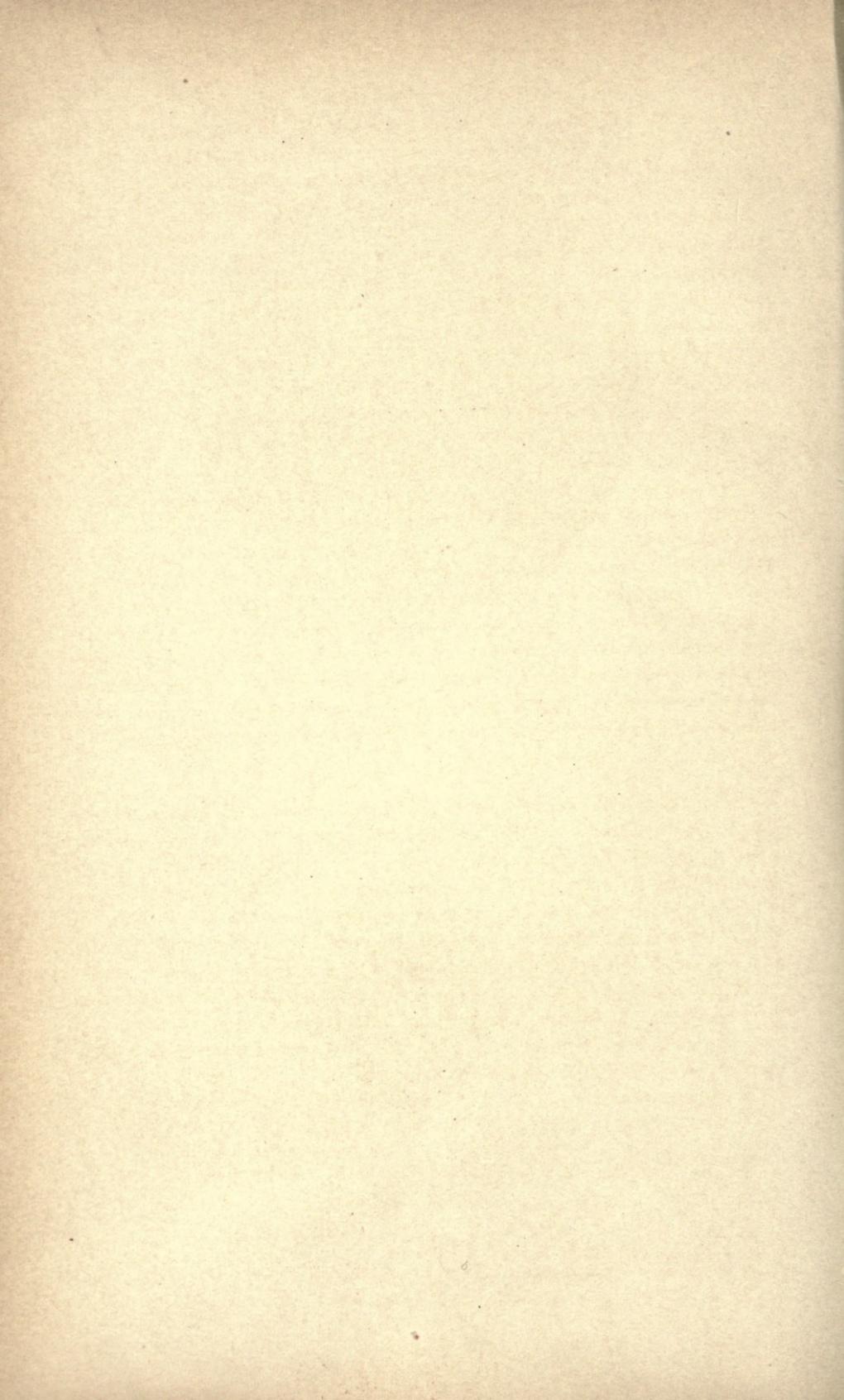
D. G. Passmore

BELLE PEACH.



D. G. Passmore

WILLETT PEACH.



at No. 110 West Fortieth street, New York City, some time prior to 1867. The property came into possession of Mr. Wallace P. Willett in 1874, and the tree was in that year large and in full bearing, carrying several bushels of fine fruit. It was crowded by buildings and fences, which necessitated frequent and severe pruning, but it survived until about 1888 or 1889. Twelve selected specimens of the fruit from the original tree were exhibited by Mr. Willett at the American Institute Fair in 1874. These specimens weighed 12 ounces each and measured 12 inches each in circumference. On this exhibit he was awarded the diploma of the institute for "Seedling peaches."

The following year Mr. Willett furnished a few scions to C. L. Van Duzen, of Geneva, N. Y., who first propagated the peach and who introduced it in 1876 under the name "Willett's Seedling," which has since been reduced to Willett, in conformity with the rules of nomenclature of the American Pomological Society.

The variety does not appear to have been widely advertised or distributed, but demand for the trees has been found to grow steadily in recent years, as its worth has been recognized in different portions of the North. Its hardiness in fruit bud, beauty, excellent shipping quality, and special adaptability for canning, preserving, and brandy-making make it one of the most promising medium late varieties for the Northern commercial grower. Unfortunately, the stock of the variety in the nurseries appears to have been considerably mixed, so that in many cases inferior sorts have been sent out under the name; hence care should be exercised by planters to secure stock true to name.

DESCRIPTION.

Form roundish obovate, conical, often unequal; size large to very large; surface very soft and velvety, covered with short, loose down; color rich deep yellow, deeply blushed, and occasionally striped with crimson; cavity very large, deep, and abrupt; suture shallow except at cavity and apex; apex moderately prominent; skin moderately thick, tenacious; stone of medium size, oval, free; flesh rich yellow, stained with red at the stone, firm and compact, yet juicy; flavor sprightly subacid; quality good, especially desirable for preserving.

Tree vigorous, foliage large; glands reniform; blossoms large.

Commended to commercial planters who find demand for a high-grade yellow freestone to follow Elberta.

The specimens shown on Pl. LXI were received from Mr. Wallace P. Willett, East Orange, N. J., in 1900.

BRITTLEWOOD PLUM.

(SYNONYM: *Brittlewood No. 1.*)

[PLATE LXII.]

In regions where temperatures lower than -20° F. are frequently experienced, the varieties of the Domestica type of plums, which

constitute the main dependence in the milder fruit regions of the North, maintain but an uncertain existence, and are not infrequently entirely destroyed by freezing. Fruit growers of the Upper Mississippi Valley in particular have sustained heavy losses in this way and have been devoting careful attention to the development by selection or breeding, or by both methods in combination, of varieties of the hardy native plum of that region (*Prunus americana* of the botanists). The result has been that a large number of wildings of greater or less promise have been transplanted to gardens and christened and introduced to the public through the medium of commercial nurseries. The large majority of these have proved to be of but doubtful value, but among them and the seedlings grown from them, some very distinct improvements over the wild type are appearing.

One of the best of these is the variety originated by Mr. Theodore Williams, of Benson, Nebr., from seed of Quaker, pollinated by Harrison Peach, the former one of the earliest introductions of this species, and one of the best in quality. Brittlewood was commercially introduced by Mr. J. W. Kerr, of Denton, Md., in 1896.

DESCRIPTION.

Form globular, symmetrical; size large for the Americana type; cavity small, shallow; stem short, slender; suture shallow; apex slightly depressed; surface smooth; color light coppery red, covered with a heavy bluish-white bloom; dots numerous, minute, russet; skin thick, tenacious, free from bitterness; stone oval, rather large, cling; flesh yellowish, translucent, meaty, juicy; flavor mild subacid, rich; quality very good. Season end of August in eastern Nebraska.

Tree strong, spreading, vigorous; worthy of thorough testing in the North.

The specimen shown on Pl. LXII was grown by Mr. Theodore Williams, of Benson, Nebr.

STODDARD PLUM.

[PLATE LXII.]

Unlike the Brittlewood, which grew from planted seed, the Stoddard plum appears to have been a wildling.

It was first brought to notice by Mr. B. F. Stoddard, of Jessup, Iowa, about 1875, who found it growing in the garden of Mrs. Caroline Baker, of that village. Mrs. Baker states that her husband secured the trees during the early settlement of the region at some point farther north, presumably in the woods, on the Maquoketa River. Her belief as to the locality of origin is strengthened by the fact that Mr. Elmer Reeves, of Waverly, Iowa, informs the writer that he found a yard in the village of Sumner full of trees of the same variety, which had been brought from near the Maquoketa River.^a

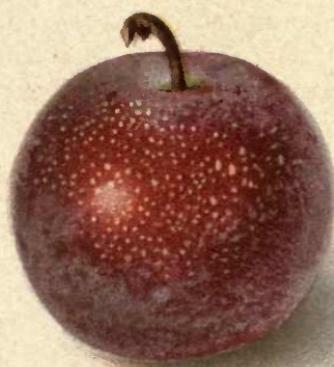
^a Letter of Elmer Reeves, January, 1903.

PLATE LXII

LINNELL'S PLUMS
OF
CALIFORNIA.



STODDARD



BRITTLEWOOD



D. G. Rossmane

GRAY LITH. CO. N.Y.

BRITTLEWOOD AND STODDARD PLUMS.





JORDAN ALMOND.

The variety was commercially introduced by the Wragg Nursery at Waukeee, Iowa, about 1895, and has been found adapted to conditions at many points between Nebraska and Maryland.

DESCRIPTION.

Form roundish, slightly oblique; size medium; cavity small, shallow; apex minute, depressed; surface smooth; color deep purplish red, with bluish white bloom; dots numerous, minute, yellow; skin rather thick and tough, acid but only slightly astringent; stone oval, of medium size, cling; flesh deep yellow, translucent, tender, juicy; flavor mild subacid, rich; quality good.

Tree strong, vigorous, and productive. A valuable sort for the North and West.

The specimen shown on Pl. LXII was received from the late Prof. E. S. Goff, of Madison, Wis., in 1901.

JORDAN ALMOND.

[PLATE LXIII.]

The exact identity and the place of production of the commercial supply of the Jordan almond were until quite recently shrouded in obscurity. Under the name "Jordan" considerable quantities of almond kernels of large size, symmetrical form, and delicate flavor have long been known in the markets of England and America. These kernels were said to have come from Malaga, Spain, where a single firm practically controlled the product and exported it entirely in the form of shelled kernels. A search of European nursery catalogues failed to afford any clue to the identity of the variety or the source from which the nuts came, and steps were accordingly taken by the Department of Agriculture, through its Division of Pomology and Section of Seed and Plant Introduction, to locate the variety in its region of commercial production and secure authentic stock for testing in the almond districts of the United States. This end was accomplished by Mr. David G. Fairchild, agricultural explorer, who, during the summer of 1901, visited southeastern Spain, investigated the orchards, and secured scions from bearing trees. From these scions trees were propagated that are now growing at several points in the United States, and may soon be expected to yield fruit.

Meanwhile, Mr. John Rock, of Niles, Cal., had secured, early in 1897, through a French correspondent, some dormant budded trees propagated on myrobalan plum stock in France from scions obtained in Spain in 1896. Fearing that the almond would not thrive on myrobalan roots in California, Mr. Rock grafted 100 of these dormant buds upon bearing peach trees, using as a scion the entire trunk of the myrobalan plum stock with the dormant almond bud upon it.

Nearly all grew and came into bearing, but only three of these proved to be of the true "Jordan" type, the others varying greatly, and most of them proving worthless.

The nuts shown on Pl. LXIII are from one of these trees on Mr. Rock's grounds, and the nuts from them submitted to dealers in Malaga, through United States Consul Ridgely, were pronounced the true "Jordan" type. The distinctive characters of the type are well shown in the illustration. Whether more than a single variety is marketed under this name yet remains to be determined. The name "Jordan" has been supposed by some to be a corruption from the French "jardin," meaning "garden," but no evidence of the accuracy of this conclusion has been discovered.

The Jordan almond^a seems worthy of testing in the milder commercial almond districts, especially in those where late spring frosts are of rare occurrence.

DESCRIPTION.

Form long, narrow, but plump, distinctly curved along the ventral suture; hull thin, downy, loosening readily from the nut; shell smooth, dense, hard, and thick, with a very smooth inner surface; kernel long, narrow, smooth, light brown, of fine, firm texture and delicate, rich flavor. As imported, the kernels are highly esteemed by confectioners for the preparation of candies and "salted" almonds, the prepared kernels usually retailing from 50 to 60 cents per pound in the latter form. Mr. Fairchild states that the various grades of kernels are designated in Spain according to size by the names of animals, such as "donkeys," "horses," "tigers," "lions," "elephants," and "mammoths," the "donkeys" being the smallest and the "mammoths" the largest grade. The sizes are separated by hand picking.

The common method of propagation, as observed in Spain by Mr. Fairchild, is to bud on bitter almond seedlings two years or more old, in the orchard at a height of 2 to 4 feet from the ground. Like other almonds, the Jordan blossoms very early in spring, and is therefore susceptible to injury by late spring frosts. Its culture will therefore probably be limited to localities specially favored in this respect. It is, presumably, considerably less hardy than the common hard-shell almond or the hardier peaches.

^aFor a fuller account of this almond as grown in Spain, see Bulletin No. 26, Bureau of Plant Industry, U. S. Dept. Agr., "Spanish almonds and their introduction into America."

M.

PROMISING NEW FRUITS.

BY

WILLIAM A. TAYLOR,

Pomologist in Charge of Field Investigations, Bureau of Plant Industry.

[REPRINT FROM YEARBOOK OF DEPARTMENT OF AGRICULTURE FOR 1903.]

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PROMISING NEW FRUITS.

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INTRODUCTION.

Notwithstanding the very strong tendency in recent years among commercial fruit growers in most sections to restrict their plantings to a few varieties of proved productiveness, beauty, and shipping quality, there are strong indications that an increasingly large number of growers are seeking fruits that combine these desirable features with distinctive flavor and superior dessert quality. The only way for the individual grower to keep pace with progress is to test the more promising kinds of the fruits in which he is specially interested; he can thus determine at small cost and with the least possible delay whether such sorts are adapted to his conditions and needs. It is for growers who desire to test such fruits that the series of descriptions and illustrations of promising new varieties published in the Yearbook from year to year is especially intended. It is believed that the varieties included represent the cream of the new sorts, selected with due regard to their adaptability to the representative fruit regions of the country.

The easiest and quickest method of testing new varieties of tree fruits is the well-known practice of top working. To test a new sort by this method it is only necessary to secure a scion or two of the desired variety for budding or grafting upon an established tree of bearing age which will constitute a suitable stock for the variety in question. As the budding or grafting of a single branch is usually sufficient for the preliminary test, a single established tree may in this way be made to carry a large number of new sorts. This plan has the further advantage of concentrating a comprehensive collection upon a small area of ground, and thus of reducing the cost of the experimental work to a minimum. To the amateur fruit grower it makes practicable the assembling of a much larger collection of varieties within the confines of a village or city garden than would otherwise be possible, and permits him to retain his touch with the continuous progress of fruit culture, even though he can not reside upon the farm or in the open country.

The results of a top-working test of a variety should never be accepted as final, however. Not infrequently varieties which make strong and thrifty growth when upon vigorous, well-established stocks develop weaknesses of root, trunk, or foliage when grown by budding or grafting upon the miscellaneous seedling stocks used in ordinary nursery practice. In some instances these defects are due to deficient vigor or too slender habit of growth; in others, to inherent inability to endure extremes of temperature or to resist injurious diseases or insect pests. The commercial orchardist, therefore, who desires to keep abreast with the rapidly advancing tide of new sorts should provide at the outset a small area of suitable land upon which he can plant from time to time two or more young trees of each new sort that gives indication of commercial value for his section. This is the practice now adopted by some of the most progressive commercial growers, and offers many advantages over the old way of planting heavily of new sorts untested in their region, many of which were destined to failure in some of the important characteristics that go to make up a really valuable commercial sort. Such a tree test is especially important with peaches and plums, where the commercial value of a variety often hinges upon the cold endurance of the trunk and the fruit buds, or the exact ripening period of the fruit with reference to older sorts already well tested in the region.

AKIN APPLE.

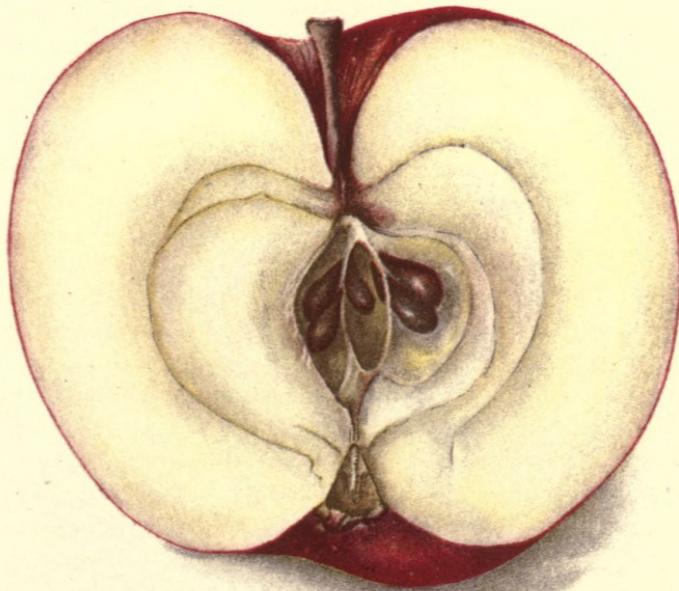
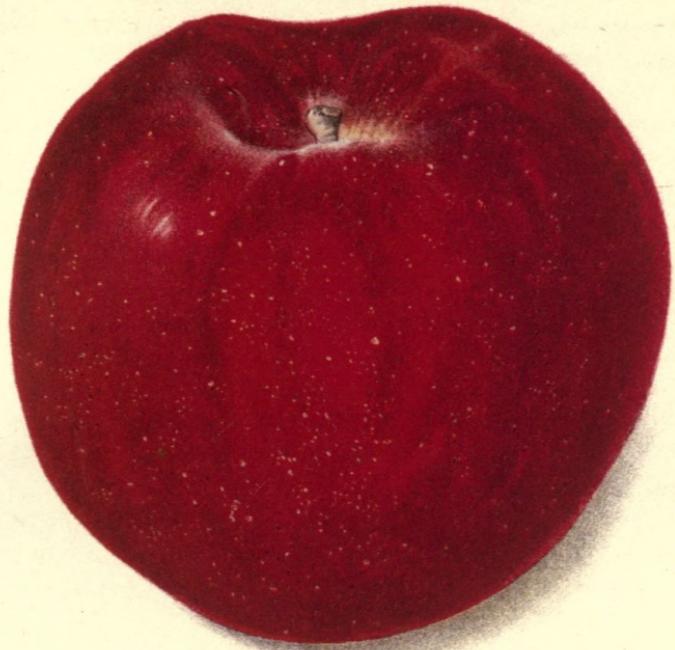
(SYNONYMS: *Akin Red*; *Akin Seedling*; *Akin's Seedling*; *Aikin's Red*; *Aiken*; *Aken*—not "Akin's Winter" of Downing, which is a crab of Minnesota origin.)

[PLATE XXXII.]

This promising commercial sort, unlike most American varieties of winter apples, appears to have been grown from planted seed. The original tree was grown from seed brought from Tennessee and planted in 1831 by Mrs. Matthew England, near Lawrenceville, Ill., on a farm now owned by Mr. W. J. Akin. Seventeen trees were grown from this lot of seed, but only the one described was considered worthy of naming and disseminating. It was first propagated for planting by Mr. John Akin, father of the present owner of the farm, who cut scions from the original tree for grafting in the nursery in 1861. Twelve of the trees grown in that year are still standing on the Akin farm. It was first propagated for sale by a Mr. Adams, a nurseryman in Wabash County, Ill., in 1868.^a It appears to have been first catalogued in 1884, by Simpson and Hogue, under the name *Akin's Red*, and first illustrated in their catalogue in 1885.^b In December, 1890, it was exhibited by Mr. W. J. Akin at the annual meeting

^a Letters of W. J. Akin, Billett, Ill., January, 1904.

^b Letter of H. M. Simpson & Sons, February 15, 1904.



TO VIVI
ALBACELLA

of the Illinois State Horticultural Society at Cairo, and was awarded first premium both as "Seedling" and as "New variety, good enough to be recommended," by a committee of which the late T. T. Lyon, of Michigan, was chairman.

The attention thus called to the variety caused it to be generally propagated by the nurseries in Illinois and nearby States, so that it was quickly given wide dissemination throughout the Middle West. It has now been fruited in several States, and is one of the most promising of the recently introduced sorts for the apple grower who desires a variety well adapted to the needs of the fancy fruit trade in the larger cities. It succeeds well in the Middle West and in the winter apple districts of the Allegheny Mountain region, and is worthy of thorough test on rich, warm soils in the northern apple districts from New York westward.

DESCRIPTION.

Form roundish, slightly ribbed; size medium; surface very smooth and glossy; color yellow, washed over almost the entire surface with bright crimson, showing some indistinct broad and broken stripes of dark crimson, sometimes overspread with gray; dots numerous, variable, but usually small, light russet and frequently indented; bloom whitish, rarely present at maturity of fruit; cavity of medium size and depth and gradual slope, somewhat furrowed and usually distinctly russetted; stem short to medium, length three-eighths to five-eighths inch, stout, usually downy; basin small, of medium depth and slope, slightly corrugated; calyx segments long, slender; eye small, closed; skin moderately thick, tenacious; core large, roundish, open, clasping the eye; seeds of medium size, plump, brown, numerous, 10 to 20; flesh yellowish, moderately fine grained, breaking juicy; flavor rather mild subacid, quality very good. Season, December to April or May; fruit enduring cold storage exceptionally well.

The tree is a strong, very upright grower, needing care in pruning to give the head sufficient spread. On this account it should be grafted low when used for top working, to counteract the well-known tendency of top grafts to run up. Though not so precocious as some, the tree appears to be a regular and good bearer, yielding a heavy crop of fruit, very uniform in size and appearance in alternate years, with lighter crops in the off years. The original tree in Lawrence County, Ill., stood until 1897, when it was blown down by a storm.

The specimen shown on Pl. XXXII was grown in the experimental orchard of the late W. S. Miller, Gerrardstown, W. Va., in the season of 1901.

TERRY APPLE.

(SYNONYMS: *Terry Winter*; *Terry's Winter*; *Terry Winter Pippin*.)

[PLATE XXXIII.]

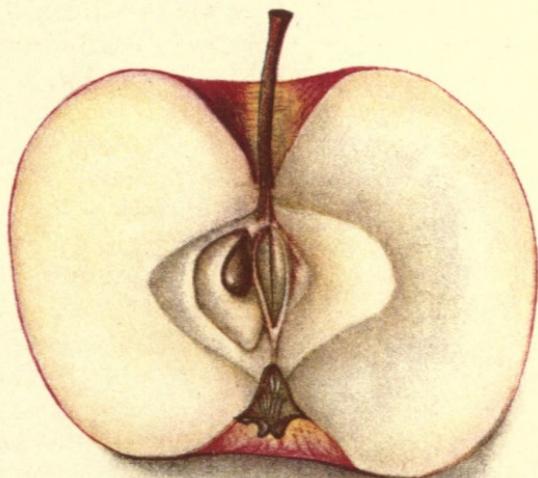
In the gradual extension of apple culture southward from the regions where this popular fruit is recognized as thoroughly at home and in congenial adjustment with climatic conditions, fruit growers have long sought for varieties that would at the same time endure long summers and intermittent winters and yield fruit that would be comparable in keeping quality with that of the more northern winter varieties when grown in their native climes. A few early sorts, particularly those of Russian origin, such as Red Astrachan and Oldenburg, endure Southern conditions well, but long-keeping winter apples, of good dessert quality, adapted to the South, are few in number. Practically all that are now grown in a commercial way in the Coastal Plain and Piedmont regions of the South Atlantic and Gulf States are of American origin, most of them tracing to origins below latitude 37° N. Among such may be mentioned Shockley, Yates, and Hall, all of which have been found to succeed through a wide range of climatic and soil conditions in the South.

Of similar character and very promising for Southern apple growers is the Terry, which is illustrated on Pl. XXXIII. This variety appears to have originated as a seedling on the farm of a Mr. Terry, in Fulton County, Ga. Mr. Terry called the attention of a nurseryman, the late James Sneed, of Morrow, Clayton County, Ga., to the character of the tree and fruit, and in 1868 Mr. Sneed cut scions from it and began propagating it under the name "Terry Winter," planting 33 trees of the variety in his own orchard.^a

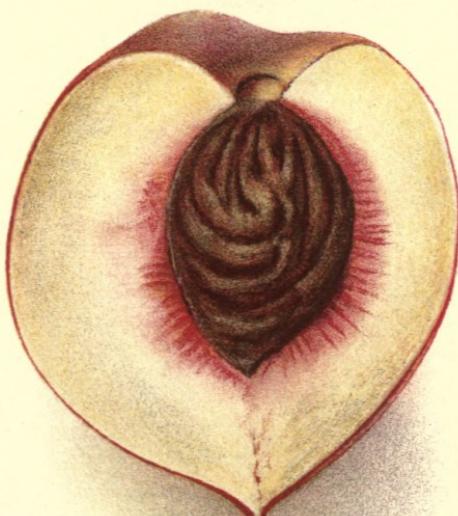
In 1884 Mr. S. M. Wayman, upon settling at Pomona, Ga., found trees of the variety in a local nursery there, the stock of which had come from the Sneed nursery, in Clayton County. He was so much pleased with the variety when it came into bearing that he began propagating it on an extensive scale, both for planting in his own commercial orchard and for sale to other planters under the name "Terry Winter Pippin."^b In 1885 Mr. W. D. Beatie found the variety in the Cole nursery near Atlanta, which he bought in that year. He continued to propagate it, and appears to have been the first to catalogue it—about 1885 or 1886. Since that time it has been very generally disseminated throughout Georgia and neighboring States. It appears worthy of general testing, both as a commercial variety and for the family orchard throughout the South and in similar warm regions where good keeping sorts of fine quality are few in number.

^aLetter of J. C. H. Sneed, January 7, 1904.

^bLetters of S. M. Wayman, December, 1899, and January, 1904.



DO VNU
AMERICANUS



Since 1892 the Terry has been listed in the "Catalogue of fruits of the Georgia State Horticultural Society" for culture in central Georgia, having been added to the catalogue upon the recommendation of the late Gustav Speth, then horticulturist of the Georgia State experiment station.

DESCRIPTION.

Form roundish to roundish oblique; size medium or slightly below; surface moderately smooth; color yellow, washed with mixed red, and brokenly striped and splashed with crimson, sometimes partially over-spread with gray; dots numerous, of medium size, russet, many aureole; cavity regular, large, deep, abrupt, marked with russet; stem of medium length, one-half inch to 1 inch, slender; basin regular, of medium size, deep, abrupt, furrowed; calyx large, segments converging or erect, eye large, closed or partially open; skin thick, tenacious; core conic, oval, clasping, small, slightly open; seeds plump, brown, of medium size, 10 in number; flesh yellow, fine grained, crisp, juicy; flavor very pleasant, mild subacid; quality good to very good; season midwinter to March in Spalding County, Ga.

The tree is of slender, upright habit, very productive, and inclined to overbear. It needs thorough pruning and cultivation to hold the fruit up in size. The specimens illustrated in Pl. XXXIII were grown by Wayman and Riegel, Pomona, Ga., in 1901.

HILEY PEACH.

(SYNONYMS: *Hiley*; *Early Belle*.)

[PLATE XXXIV.]

One of the most promising of the newer varieties of the Chinese Cling group of peaches is the Hiley. This variety originated on the fruit farm of Hiley Brothers, Fort Valley, Ga. A row of about 150 seedlings was grown by them from mixed seed of Elberta and Belle, planted in 1889. Of these, the fruit of one tree which bore its first fruit in 1892 was considered desirable for market. The original tree was destroyed by borers two years after it bore its first crop of three peaches, but as buds had already been cut from it for propagation in orchard, the variety was preserved. Mr. R. A. Hiley, who first discovered its value, considers it a seedling of Belle, probably crossed with either Tillotson or Alexander.

The variety was christened "Early Belle," and the fruit was at first shipped under that name, but the name was later changed to Hiley, and it appears to have been first catalogued under that name by Mr. J. H. Hale, in 1900.

The Hiley has been heavily planted in Georgia as a commercial variety, and is especially commended as an early sort of good shipping quality and excellent flavor. It appears to be worthy of testing in

commercial orchards over a much wider area, where a white-fleshed freestone, ripening earlier than Mountain Rose, is desired.

DESCRIPTION.

Form roundish, often distinctly conical; size medium to large; surface smooth, well covered with soft, short, velvety down; color creamy white, with a bright crimson blush on the side exposed to the sun; cavity regular, of medium size, moderate depth, and abrupt slope; suture shallow except near cavity; apex usually sharp and prominent; skin rather thin and moderately tenacious; stone reddish, oval, long, sharply pointed, quite smooth, and rather small; flesh creamy white, usually slightly stained with red both near skin and near stone, rather firm though quite juicy; flavor slightly subacid, pleasant; quality very good for so early a variety; season about with Tillotson, June 15 to July 1 in Houston County, Ga. Reported by Mr. J. H. Hale to ripen about August 1 in Connecticut.

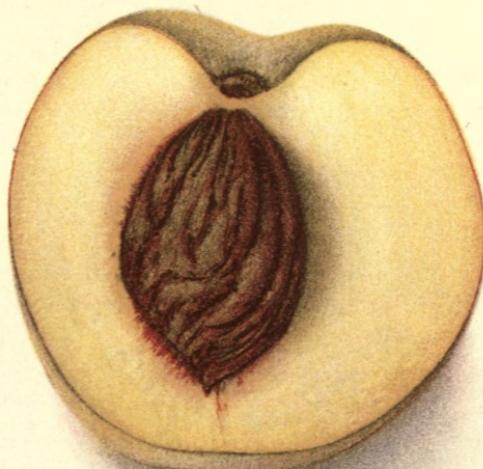
Tree rather slender in growth, with leaves narrower than its supposed parent, Belle; very productive, and considered equal to its supposed parent in hardiness; glands reniform; flowers large.

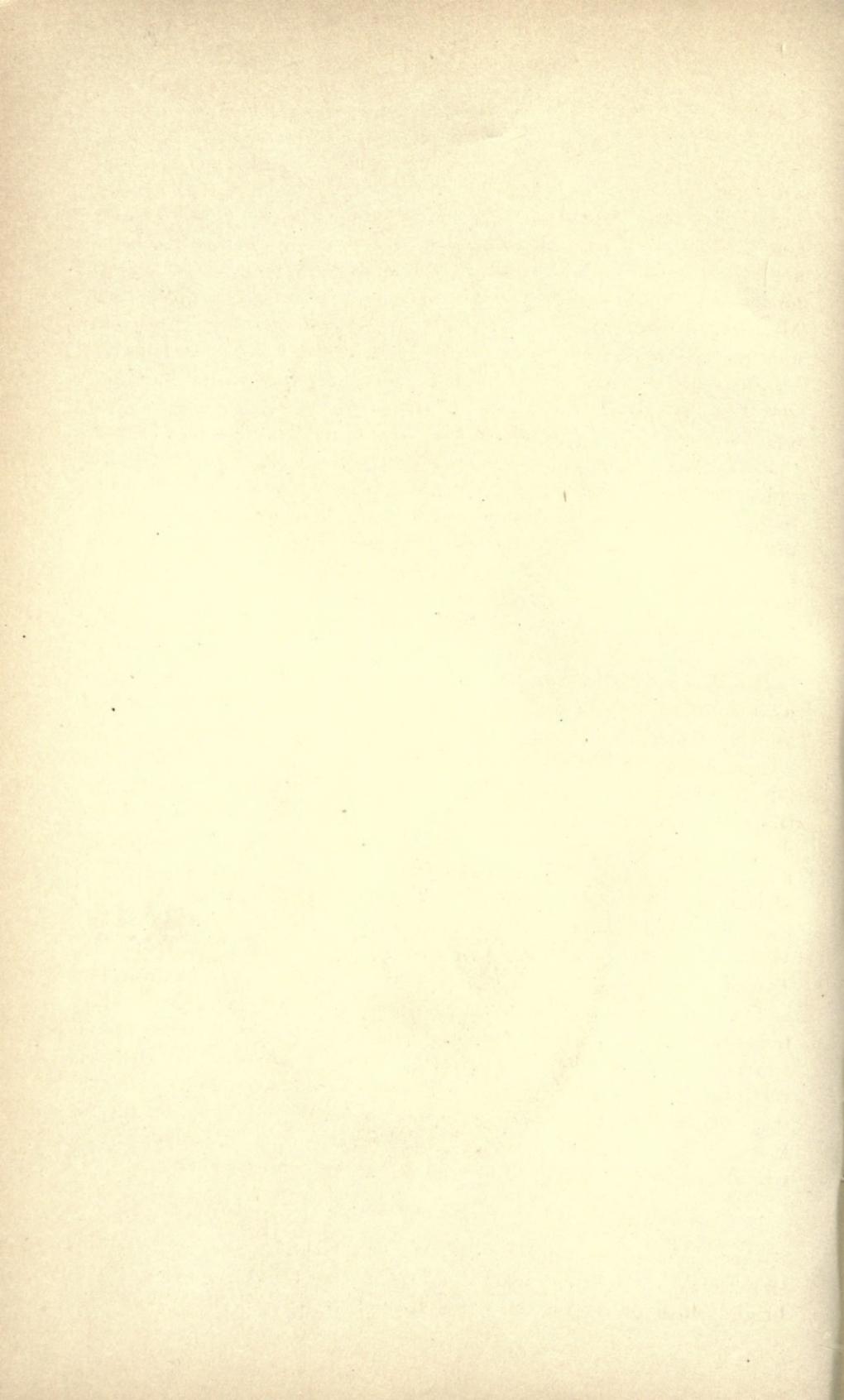
To the Hiley was awarded the Wilder medal of the American Pomological Society at the Boston meeting in September, 1903, upon the recommendation of the ad interim committee of awards, as a promising new variety.

WELCH PEACH.

[PLATE XXXV.]

In many portions of the country, where the climatic conditions during the growing season favor the development of peaches, the production of this delicious fruit is restricted by the occurrence of occasional low temperatures in winter. This is especially true of important districts in New England, New York, and the Lake region, the climate of which is favorable to peach growing if good varieties can be found that will endure occasional minimum temperatures of -10° to -15° F. in December, January, or February, when the trees are dormant. The earlier commercial orchards of those regions were planted with little reference to the fruit-bud hardiness of the varieties, the most popular sorts being of the Crawford and Oldmixon types. These succeeded well in favorable seasons, but usually failed when minimum temperatures lower than -10° F. occurred. The general failure of these varieties to produce regular crops aroused a very general interest in the development of hardy types of the peach throughout the North about thirty years ago. The occurrence of low temperatures over wide areas during the winters of 1872-73 and 1874-75 brought to light the fact that one of the types most resistant to winter cold was that which had been grown both in the form of budded trees and seedlings for many years in different sections of





Connecticut, New York, and Michigan, under such names as *Connecticut*, *Stanley's Late*, *Sugar*, *Jenny Lind*, *Leopard*, *Queen of Sheba*, *Seagrove's Smock*, *Cass*, and *Hill's Chili*. The place, time, and source of the introduction of this type of peach to America are as yet undetermined, but it was frequently found to endure temperatures that destroyed the fruit buds of the other varieties in the same orchards, and thus achieved marked popularity among commercial planters in the regions mentioned. The form of the type that had long been perpetuated by a Mr. Hill, of Chili, Monroe County, N. Y., was very widely propagated and planted under the name "*Hill's Chili*," and soon became the leading commercial peach of the most northern peach districts. This variety or type reproduces itself through its seedlings quite closely, and for a number of years many nurseries in Michigan propagated their stocks of it for sale as seedlings. The resulting trees, when they came into bearing in the orchards, were chiefly of the "*Chili*" type, though several wide variations in color of flesh and time of ripening have come to notice, several of which, such as Lewis, Brown, Early Husted, and Early Michigan, have been named and propagated. Others, like Lafleur, that vary but slightly, are considered sufficiently superior to the parent in some important particulars to be worthy of a distinct name and place in the orchards.

The variety of this type to attain commercial notice most recently in western Michigan is the Welch, the original tree of which was received by Mr. Charles B. Welch, of Douglas, Mich., in 1880, in a bundle of 25 seedling "*Chili*," from the nearby nursery of Walsh and Wade. Of these 25 seedlings, all proved to be good typical "*Chili*" except the one now described, and one other, which was a good white-fleshed freestone. The tree of the Welch ripened its fruit noticeably later than the *Chili*, and was found to yield fruit of superior quality, as well as to be less subject to injury by curl-leaf and drought than its parent and equally as resistant to cold. At the request of Mr. Welch, a few trees were propagated from it by the late Mr. James F. Taylor, of Douglas, Mich., about 1888 to 1890, and its propagation and planting has gradually increased in western Allegan County since that time. It is considered equal to its parent in every respect and superior in habit of growth of tree, ability to endure drought and resistance to curl-leaf and rot, and ripens at a more opportune time, thus lengthening the season of supply of hardy varieties. So far as known it has not been fruited in other States than Michigan, but is considered worthy of test throughout northern peach districts.

DESCRIPTION.

Form roundish to slightly obovate; size medium to large; surface smooth, very slightly downy, color rich, rather light yellow, with a bright blush of red on the exposed side; cavity regular, medium in

slope and depth; suture shallow except at apex, which is minute, rarely projecting beyond the suture; skin rather thick and tenacious, slightly acid; stone small to medium, plump, oval, free; flesh light yellow, quite firm, yet melting and juicy; flavor sprightly subacid and vinous; quality good to very good, specially adapted to shipment and canning; season moderately late, a few days after Chili, about September 20 to 30 in Allegan County, Mich.

Tree a vigorous though rather slender, upright grower, rooting more deeply than Chili, and therefore enduring drought better, hardy and regularly productive; leaf glands large, numerous, reniform; flowers small.

The specimens illustrated on Pl. XXXV were grown by the late Mr. James F. Taylor, Douglas, Mich., in 1903.

SPLENDOR PRUNE.

[PLATE XXXVI.]

Among the prune growers of the Pacific coast the desirability of an earlier and larger variety of plum than the Agen (synonyms, *Petite*, *French*; etc.) suitable for curing into prunes has long been recognized. The prune-growing sections of the Old World, especially those of France, have been canvassed, and several more or less promising sorts now under commercial test have been secured within the past ten years. Meanwhile Mr. Luther Burbank has been at work upon the problem from the plant breeder's standpoint, and has produced at least two very promising varieties, "Splendor" and "Sugar," which are illustrated in Pl. XXXVI.

Splendor is stated by Mr. Burbank to have been grown from seed of the Agen, or common "French" prune of California, which was first introduced to California from France in the form of scions brought to San Jose in December, 1856, by Louis and Pierre Pellier. It was the result of a cross by Pond (synonyms, *Pond Seedling*, *Hungarian Prune*, *Grosse Prune d'Agen*, etc.), an English variety of large size that has long been grown throughout the plum-growing districts of the Northern and Eastern States. Splendor was first described and offered for sale by Mr. Burbank in his catalogue of "New creations in fruits and flowers" for 1893, where it was provisionally listed under the designation "Crossbred Prune A. P.-318." The original tree and the right to propagate and introduce the variety were purchased of Mr. Burbank soon thereafter by the Stark Brothers Nurseries and Orchards Company, who introduced it under the name "Splendor" in 1894. It is now under test in commercial orchards throughout the Domestica plum districts of the United States and Canada, and promises well as a shipping, dessert, and curing plum.



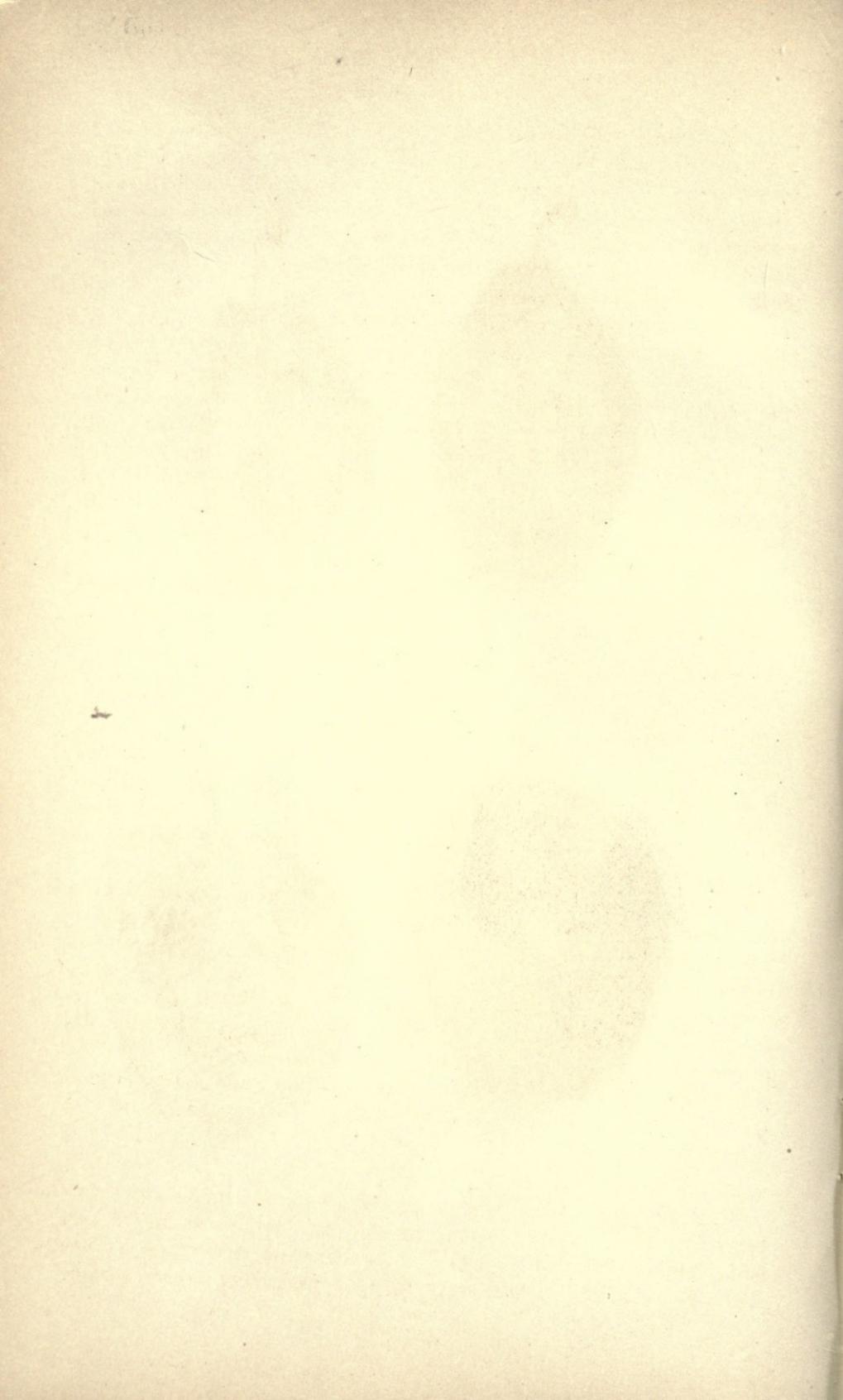
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2

1. SPLendor PRUNE.

2. SUGAR PRUNE.



DESCRIPTION.

Form oblong oval to obovate, with a rather distinct neck; size medium to large; cavity regular, small, shallow; stem medium to long; suture shallow, except near apex; apex very slightly depressed; surface smooth, glossy, purplish red, with minute russet dots and covered with a rather profuse bluish bloom; skin moderately thick and tenacious, slightly acid; stone small to medium, long, oval, free; flesh yellowish, translucent, with light veins, of meaty texture; flavor sweet and rich; quality very good; season about a week earlier than Agen in Sonoma County, Cal.

The tree is described by Mr. Burbank as resembling its female parent in general appearance, with more sturdy branches, abundantly vigorous and productive. The fruit hangs long to the tree, and objection to it has on this account been made by some prune growers, as it renders picking of the fruit from the tree necessary instead of shaking it to the ground. This characteristic should commend it to Eastern growers in sections where occasional high winds at ripening time damage the crop by shaking off and bruising.

The specimen illustrated on Pl. XXXVI was grown by Mr. Leonard Coates, at Napa, Cal., in 1902.

SUGAR PRUNE.

[PLATE XXXVI.]

This very promising seedling of Agen (synonyms, *Petite*, *French*, etc.) is not known to be the result of a cross with any other variety. It gives every indication of surpassing its parent in all the qualities that go to make up a first-class drying prune, being equal in all observed characteristics and superior in sweetness, size, earliness of ripening, and rapidity of curing.

The variety was named by Mr. Burbank, and appears to have been described first by the late B. M. Lelong in the preliminary report of the California State board of horticulture for 1897-1898. It was introduced by Mr. Burbank in the form of scions for grafting and a few two-year-old trees on peach roots in 1899. On account of its earliness, it quickly assumed commercial importance in the California prune districts, and has been top grafted on other prunes and on almonds to the extent of hundreds of acres in that State and in Oregon. Its behavior thus far marks it as the most promising curing prune yet brought to notice.

DESCRIPTION.

Form oblong to oval oblong or obovate; size medium to large (very large for the Agen class); cavity regular, medium in size, depth, and slope; stem short, rather slender, loosening easily when ripe; suture shallow, extending from cavity to apex; apex depressed; surface

smooth, dark purplish red with minute russet dots and rather slight bluish bloom; skin moderately thick, tenacious; stone medium to large, oval, cling; flesh yellowish, translucent, meaty, moderately juicy; flavor very sweet and rich; quality very good. Season about three to four weeks earlier than Agen in Sonoma County, Cal. The tests made by the chemist of the experiment station of California show this variety to be distinctly richer in sugar than Agen, while practical tests on a large scale have demonstrated its quick-curing character. Its large size (the dried fruit running 20 to 30 to the pound) renders it popular with consumers. On account of its earliness, it is considered especially promising for the prune districts of the Pacific Northwest, where untimely rains not infrequently interfere with the curing of the later varieties.

The tree is a more vigorous grower than its parent and a heavy bearer. It is considered by the originator to be less subject to injury by spring frosts than the parent variety.

The specimens illustrated on Pl. XXXVI were grown by Mr. Burbank on his trial grounds at Sebastopol, Cal., in the season of 1900.

HEADLIGHT GRAPE.

[PLATE XXXVII.]

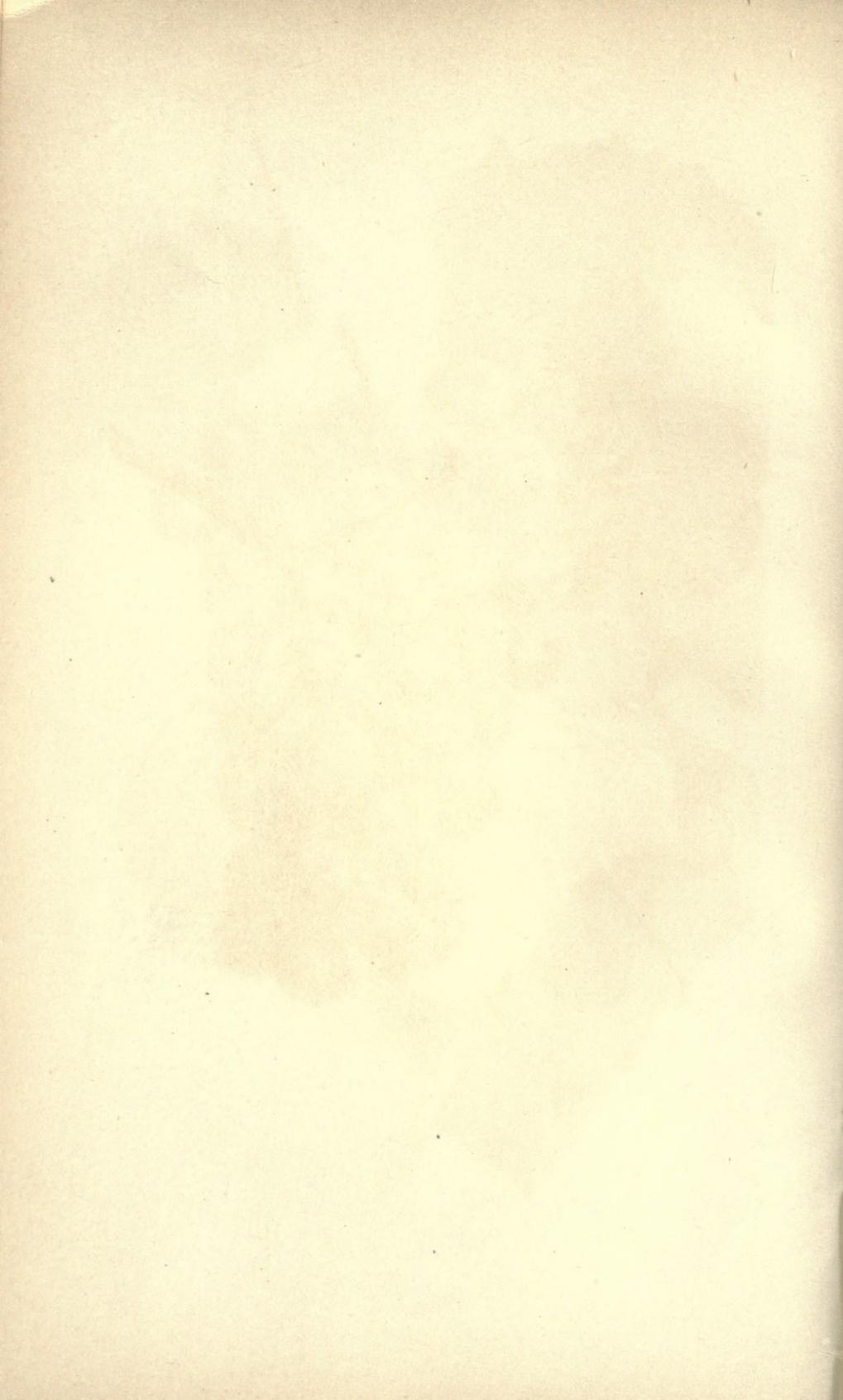
One of the things long desired by Southern fruit growers is a good table grape, sufficiently resistant to leaf and fruit diseases to endure the climatic conditions of their section. Many varieties have been brought forward from time to time; but of the older sorts especially adapted to table use not one, either foreign or native, has yet proved successful over any large area. One of the most promising recent introductions in this field is the Headlight, which was originated by Prof. T. V. Munson, of Denison, Tex., in 1895. It is reported by the originator to be a seedling of Moyer—the result of a cross of Brilliant upon the former variety. Its desirable qualities of vigorous growth, disease-resistant foliage, productiveness, and early ripening render it worthy of thorough testing throughout the South.

It appears to have been described first by Professor Munson in the Catalogue of the Texas State Horticultural Society for 1899 in a tabular list of promising varieties not yet introduced. It was first disseminated commercially by the originator in 1901–1902.

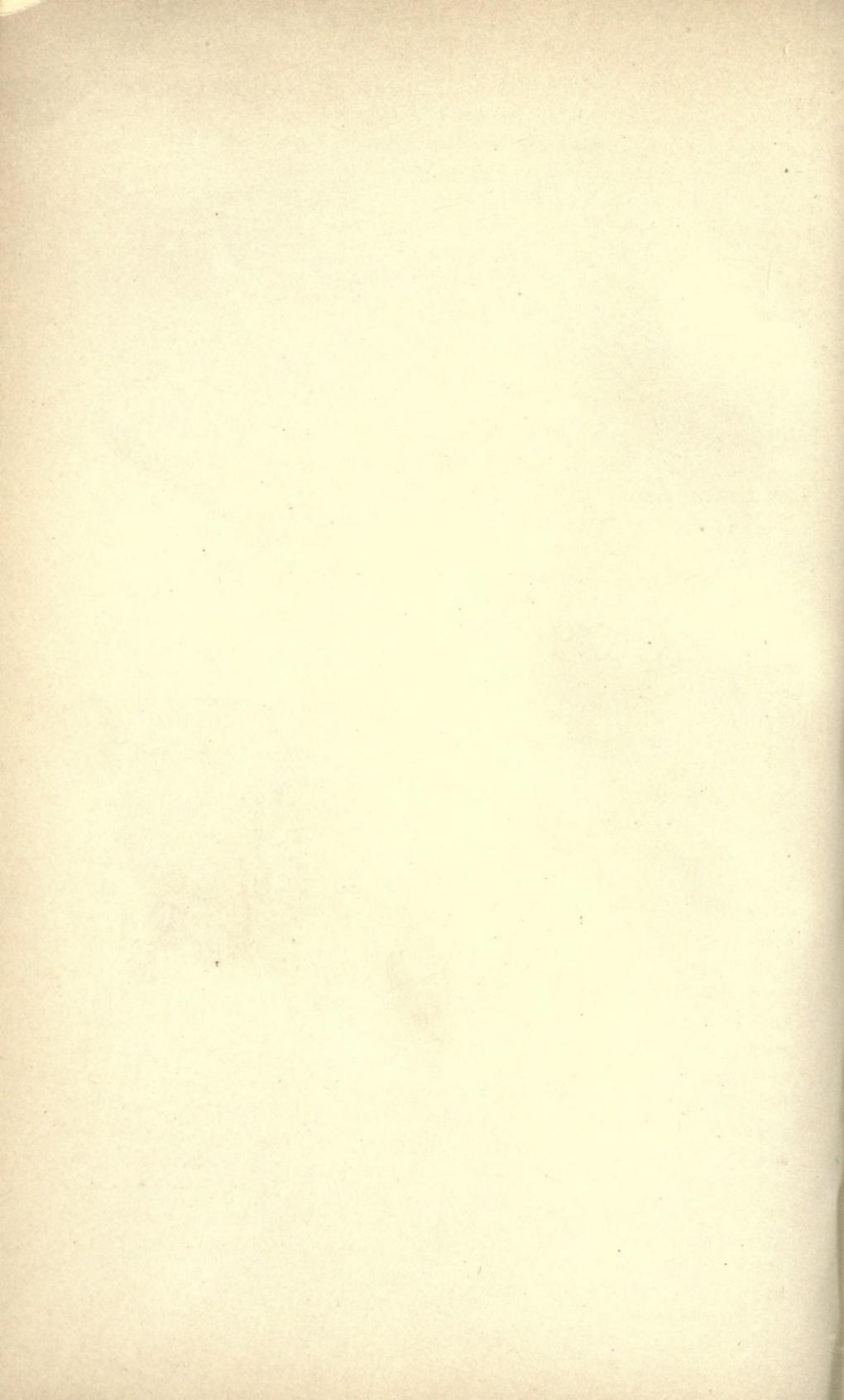
DESCRIPTION.

Cluster cylindrical, small to medium, averaging about equal to Delaware, very compact and usually shouldered; berry small to medium, round, adhering firmly to pedicel; color dark red, covered with bluish bloom; skin moderately thick and tough, enduring handling without injury; pulp translucent, green, tender, juicy; seeds few, small to medium; flavor very pleasant, sprightly and vinous, without









foxiness; quality very good; season very early, ripening with Champion, and hanging long on the vine without deterioration in attractiveness or quality. It is also considered promising as a wine grape for the South.

The vine is vigorous, short jointed, and very productive, and so far as tested distinctly resistant to cold, having endured -15° F. at Denison, Tex., without injury.

The specimen cluster illustrated on Pl. XXXVII is rather below the characteristic size. It was grown in the vineyard of Prof. T. V. Munson, at Denison, Tex., in 1903.

CARDINAL STRAWBERRY.

[PLATE XXXVIII.]

Since Hovey gave to the world his famous "Hovey Seedling" strawberry in 1834, there has been an almost unbroken succession of new sorts of this popular fruit. Differing widely as these varieties do in their important characteristics, it is now very generally agreed among fruit growers that no one variety has yet been produced or is likely to be developed that will excel all others in all the qualities that go to make up a desirable variety. The highest flavor and adaptability to culinary use are rarely found in the same sort, while ability to endure shipment well is still less frequently encountered in productive sorts of good color, size, and flavor. The varieties of greatest commercial importance at present are doubtless those that combine in largest degree fair size and productiveness with firm texture, attractive color, symmetrical form, good flavor, opportune season of ripening, and adaptability to a wide range of climatic conditions.

One of the most promising of the recently originated varieties that are now being tested in various sections is the Cardinal, which is illustrated in Pl. XXXVIII. This variety traces to one of a number of seedlings discovered by Mr. George J. Streator, of Garrettsville, Ohio, in 1896, in a portion of his vegetable garden where strawberries had previously been grown. These little seedling plants were carefully transplanted to a location where they could be brought into fruiting, and were held under observation for two years. The one afterward named "Cardinal" was from the start noticeably superior to the others in vigor of growth and healthiness of foliage, and when fruited was found to yield a good crop of very desirable berries. After several years of observation of its behavior, the originator secured plants of about 40 leading varieties and planted a trial bed for comparison, in which the Cardinal was found by capable judges in 1903 to surpass them all in vigor, productiveness, and other important market qualities on the clay loam soil in Portage County, Ohio, where the test was made. It is considered well worthy of testing by commercial growers throughout the country.

DESCRIPTION.

Form, roundish or roundish conical, occasionally slightly compressed and broadened, rarely necked; size, medium to large; surface, glossy, bright crimson, not fading; ripening evenly; seeds, small and mostly depressed; calyx, large, tenacious, pale green; flesh, quite firm and solid, salmon red, juicy, but apparently of good shipping quality; flavor subacid, sprightly, with distinct aroma; quality, good to very good, especially for canning; season, medium to late, closely following Bubach, about the first week in June in Portage County, Ohio.

The plant is pronounced a very vigorous grower, with foliage resistant to rust, and an abundant plant maker. The blossoms are imperfect. The fruit is borne on strong trusses and the variety is reported to be enormously productive.

The specimens illustrated on Pl. XXXVIII, reduced to four-fifths diameter, were grown by the originator, Mr. George J. Streator, at Garrettsville, Ohio, in 1903.

M. L. Burrows
~~C. D. Burrows~~
A. W. S.

PROMISING NEW FRUITS.

BY

WILLIAM A. TAYLOR,

Pomologist in Charge of Field Investigations, Bureau of Plant Industry.

[REPRINT FROM YEARBOOK OF DEPARTMENT OF AGRICULTURE FOR 1904.]

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INTRODUCTION.

So long as improvement of fruits continues, whether through chance variation or through systematic selection and breeding, it will be necessary for the progressive fruit grower to keep in touch with the advances that are being made along the particular lines in which he is interested. The largest profits in commercial fruit growing not infrequently result from judicious planting of comparatively new varieties which have shown strong indications of adaptability to particular regions or to special uses before either of these points has been fully established by actual experience. It is the purpose of the series of Yearbook papers to which the present article belongs^a to direct the attention of fruit growers to some of those new or little-known varieties of important fruits which appear worthy of testing in different parts of the country.

BLOOMFIELD APPLE.

(SYNONYMS: *Bentley's Seedling, Bloomfield Bentley.*)

[PLATE L.]

This very promising autumn variety for the home orchard and near-by market originated as a chance seedling which came into bearing about 1880 at Bloomfield, the farm of the late Richard T. Bentley, of Sandy Spring, Montgomery County, Md. Its fruit was found to be so excellent in quality, as well as so handsome in appearance, that it was quite widely disseminated throughout Montgomery and Prince George counties, Md., by top grafting trees in established orchards. Soon thereafter it was commercially propagated by the late Chalkley Gillingham, of Accotink, Fairfax County, Va., and other local nurserymen of Maryland and Virginia, so that it is now quite widely disseminated through the family orchards of the Potomac River counties of both States. Prior to 1894 it was known as "*Bentley's Seedling*," but the attention of Mr. John C. Bentley, the present owner of the farm on which the variety originated, having been called to the

^a See Yearbooks of the Department of Agriculture for 1901 (p. 381), 1902 (p. 469), and 1903 (p. 267).

close similarity of this name to "Bentley Sweet," an old established variety with which it was in danger of being confused by the public, he consented to the adoption of the name "Bloomfield (*Bentley*)," under which it was described in the Report of the Pomologist of the Department of Agriculture for that year (p. 17).

The variety bears a group resemblance to the "English Red Streak" of the Middle Atlantic States, and is probably a seedling of that sort.

DESCRIPTION.

Form roundish or broadly cylindrical, truncate; size large; surface smooth; color yellowish, washed with crimson, striped with darker red and overspread with gray; dots conspicuous, sometimes triangular, protruding, russet, some having dark centers; cavity angular, large, deep, abrupt; stem short, rather stout, often knobbed; basin wide, deep, abrupt, furrowed and slightly leather-cracked; calyx segments short to medium, sometimes reflexed; eye large, open; skin thin, tough; core of medium size, conical, clasping; seeds few, plump, brown; flesh yellow, with a darker core line, moderately fine, tender, juicy; flavor subacid, rich; quality good to very good for both dessert and culinary use. Season, September to November in Montgomery County, Md.

Tree a rather stocky and vigorous grower, requiring strong soil, and an abundant annual bearer. This variety has for a number of years proved to be one of the best apples of its season in the Washington markets, and is worthy of wider dissemination both for home use and market.

The specimen illustrated was grown by Mr. Thomas O. Duvall, Spencerville, Montgomery County, Md.

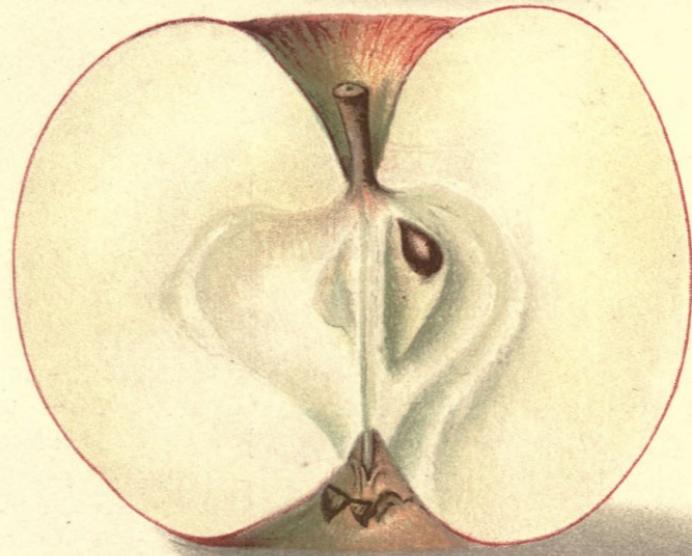
DOCTOR APPLE.

(SYNONYMS: *American Nonpareil* of Mease and Thacher, but not of Coxe or Downing; *Dewitt*, *Doctor Dewitt*, *Red Doctor*, *Newby*.)

[PLATE LI.]

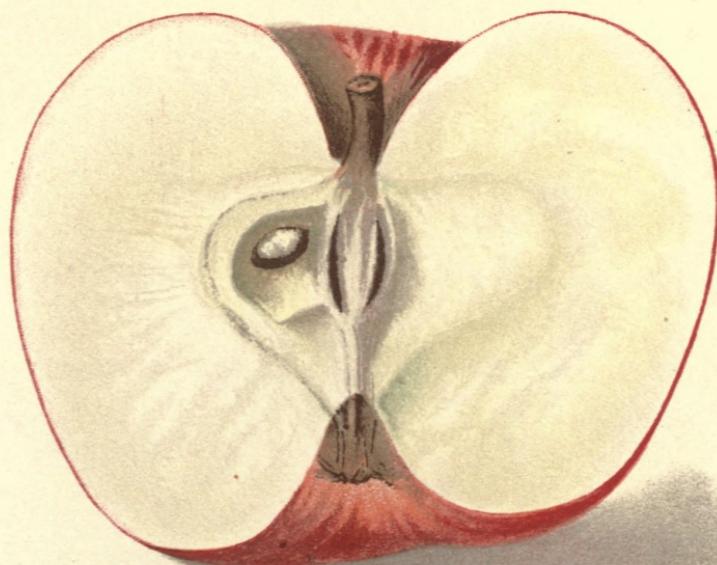
Though included in Mease's list of "Apples most commonly cultivated" ^a in the United States a century ago, the real merit of this variety appears to entitle it to a place among the promising sorts throughout a wide range of climate. The fact that Mease, in the first published description of the variety, above cited, appears to have confused it with American Nonpareil, a summer apple, possibly accounts in part for the long period of obscurity from which it now appears to be emerging. Most of the early American writers mention it, but in several instances it is doubtful whether they were familiar with the

^a Willich's Domestic Encyclopedia, first American edition; with additions, by James Mease, M. D., Philadelphia, 1804. Vol. III, p. 111.



D. G. Passmore

BLOOMFIELD APPLE.



DOCTOR APPLE.

D. G. Passmore

true sort, which evidently possesses high merit in several important points, and gives evidence of becoming a popular variety.

Its rediscovery, after remaining practically an unknown sort except in a few widely scattered localities, is due to Mr. Thomas T. Newby, of Carthage, Ind. Mr. Newby's father grafted a tree with scions from a tree of unknown identity in an orchard in that vicinity in 1854, and some twenty years later Mr. Newby himself grafted a small seedling tree of the same variety. Being impressed with the beauty, symmetry, and uniform size of the fruit, which he found to be of fair dessert quality, Mr. Newby, who had supposed it a well-known old variety, became convinced of its value when he found that the severe winter of 1880-81, which nearly ruined the orchards in his section, did not injure it. He then undertook to ascertain its identity, submitting specimens to experts and exhibiting the variety at State and other fairs repeatedly with this end in view. These efforts having failed, a committee of the Indiana Horticultural Society in 1894, in commending its excellence, published it in the report of the society for that year under the name "Newby," and it was described under that name in the Report of the Pomologist of the Department of Agriculture for that year.

During the summer of 1900, among the old varieties which reached the Department were some specimens of Doctor from Mr. D. C. Boring, of Thornville, Ohio, and it was through these that the identity of Mr. Newby's apple was established. Meanwhile Mr. Newby had in the autumn of 1899 forwarded for exhibition in the American fruit exhibit at the Paris Exposition during the summer of 1900, a quantity of specimens of the variety, which attracted much attention by their symmetrical form and beautiful color. Scions were distributed by the Department in 1895 to a number of State experiment stations and individual growers throughout the more important northern apple districts, and from its behavior during the past four years it is considered well worthy of experimental planting for special markets from Maryland northward to Maine and westward to Lake Michigan. While not of the highest dessert quality, it is superior in this respect to a number of the standard commercial sorts and in beauty is surpassed by none.

DESCRIPTION.

Form oblate or roundish oblate, sometimes slightly oblique; size uniformly large; surface very smooth, glossy at ripening time, becoming very oily when stored under ordinary cellar or warehouse conditions; color a rich yellow, lightly washed with mixed red and indistinctly striped and splashed with crimson; dots scattering, russet, occasionally aureole; cavity regular, large, deep, with gradual slope, somewhat russeted; stem short, rather stout; basin regular, large, deep, furrowed and downy; calyx segments medium, converging,

sometimes reflexed; eye large, usually open; skin thick, tenacious; core medium, oblate conical, open, clasping; seeds numerous, plump, brown; flesh yellowish, moderately fine, breaking, juicy; flavor subacid, pleasant; quality good to very good. Season, October to January in Ohio and Indiana, keeping well in cold storage.

The tree is a stocky grower, making a rather upright head, and is a regular bearer of good crops.

The specimen illustrated was grown by Mr. D. C. Boring, of Thornville, Ohio.

ROSSNEY PEAR.

[PLATE LII.]

It is a noticeable fact that a much larger proportion of pear than of apple varieties that have attained important commercial rank in America are of European origin. In fact, outside of American varieties of the Oriental class, such as Le Conte, Kieffer, and Garber, very few American pears have become important in a commercial way. One of the most promising recent candidates for favor in this respect is the Rossney. According to the introducers, this variety originated in Salt Lake City, Utah, from a mixed lot of Winter Nelis and Bartlett seed planted for stocks by William Woodberry in 1881 or 1882. The peculiarly strong and vigorous growth of one of the trees and the distinctness of its foliage and wood caused the owner to save it when the rest of the seedlings were budded. It bore its first fruit at the age of 5 years and was propagated from in a small way by the owner shortly thereafter for his own planting under the name "Woodberry Seedling." The original tree was sold by Mr. Woodberry in 1891 to the Pioneer Nurseries Company of Salt Lake City, Utah, who named the variety "Rossney" in honor of Mr. William E. Rossney, of Bloomington, Ill., and introduced it in 1898. From observation of its behavior in several States since that time it is considered a promising variety for the commercial planter throughout the Northern and Middle States where Bartlett and similar varieties succeed.

DESCRIPTION.

Form oval pyriform, somewhat angular and ribbed toward the apex; size large, surface undulating and somewhat uneven; color golden yellow, blushed with scarlet and thinly overspread with a bluish white bloom; dots numerous, minute, russet, indented; cavity regular, of medium slope and depth; stem rather long, moderately stout; basin regular, small, abrupt, shallow; eye small, closed; skin thin, tenacious; core oval, medium in size, meeting the eye; seeds few, small, brown; flesh yellowish, buttery, juicy; flavor mild subacid; quality good to very good. Season about ten days later than Bartlett.

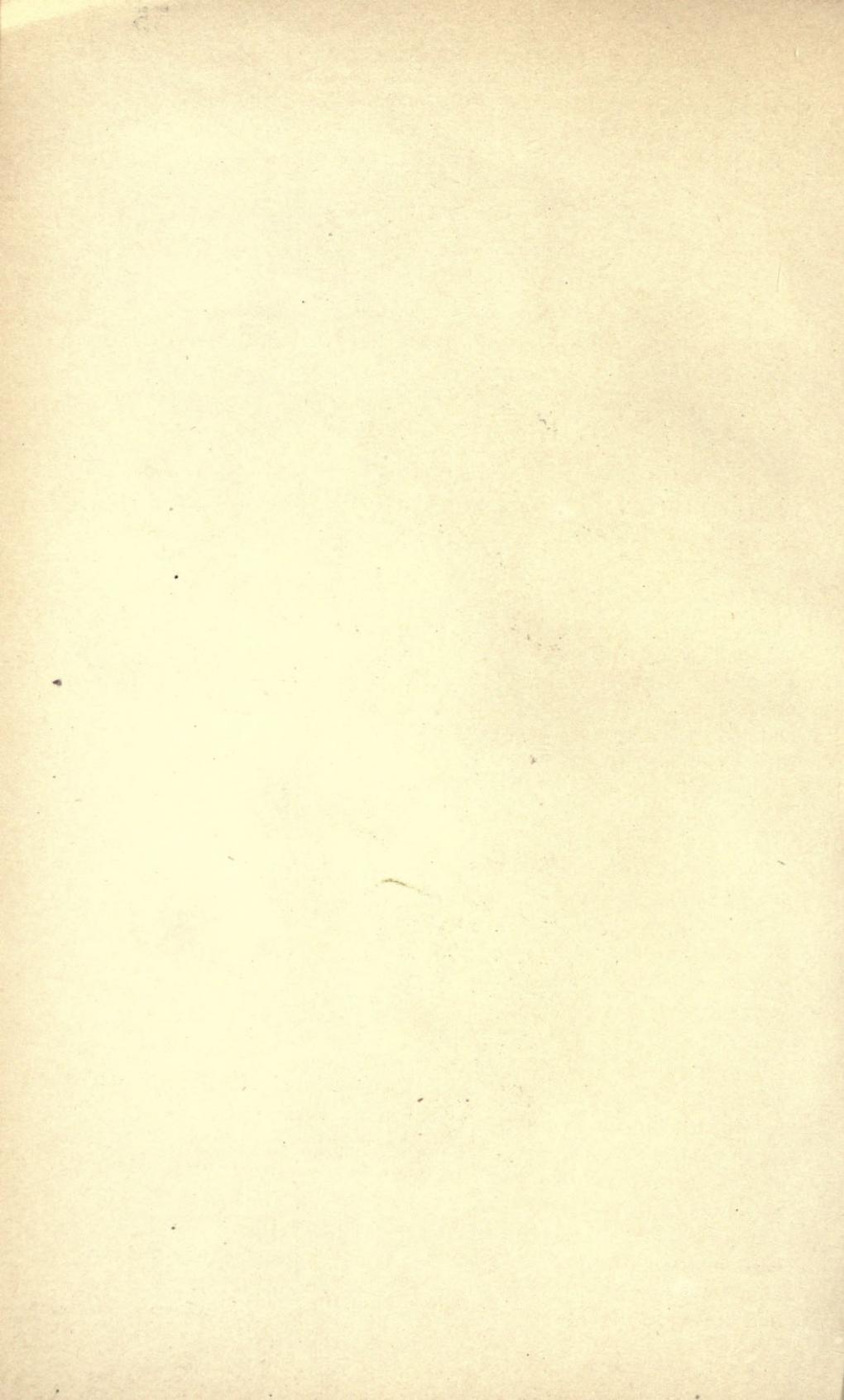
The original tree is a strong and vigorous grower, erect in habit, and thus far free from blight, and the young trees now in orchards



D. G. Passmore

ROSSNEY PEAR.





through the Eastern States are also reported free from blight injury up to this date, although in localities where the disease is present.

The specimen illustrated on Plate LII was grown at Salt Lake City, Utah.

MILLENNIAL GRAPE.

(SYNONYMS: *Hungarian Millennium, Ezeréves Magyarország Emléke* of Hungarian nurseries.)

[PLATE LIII.]

New varieties of the Vinifera class of grapes which differ sufficiently from existing sorts to warrant introduction and naming are now of rare occurrence. In fact, the limit of variation along desirable lines except through hybridization with other species of grapes appears to have been nearly reached. It is, therefore, worthy of note that a variety recently originated in Hungary, which was introduced into this country in 1897, in the form of cuttings received from Mr. Sigmund Katona, of Kecskemet, Hungary, possesses characteristics which mark it as an apparent exception to the general rule. This variety, which, according to its originator, is the result of a cross between Chasselas Doré (synonym *Queen Victoria White*) and Calabre, was grown by Mr. Johann Mathiasz, of Kecskemet, from seed planted in 1887. It was named in 1896 in honor of the millennial of the establishment of the Hungarian Government, which was then being celebrated. The points of special excellence claimed by the originator are the strength, vigor, and productiveness of the vine and the exceptional beauty, fine flavor, and excellent keeping and shipping quality of the fruit.

Its record in Napa County, Cal., where it has been fruited on grafted vines since 1899, bears out these claims in large degree, and indicates that it is especially promising as a table grape of high quality, as well as adapted to the making of high grade white wine.

The following field characterization of the variety is based upon specimens grown by the late Prof. George Husmann, of Napa, Cal., who was the first to fruit and report upon the variety in America, so far as known.

DESCRIPTION.

Bunch medium to large, compact, shouldered; berries large, round, resembling Malaga in shape and size; color yellowish white with a brownish blush on sunny side; skin transparent, thin, but tough; flesh quite tender and juicy, having a very sweet, pure flavor; seeds few; quality very good, keeping and enduring shipment well. Season, September, in Napa County, Cal.

Vine a strong grower, with close joints; apparently well adapted to close or stool pruning; very productive, showing after the first crop an abundant second crop of good-sized bunches and berries; leaf large and heavy, heartshaped, not lobed.

As it is a pure Vinifera it is, of course, unlikely to succeed outside of the recognized districts where that species can be profitably grown.

The cluster illustrated on Plate LIII was grown by Mr. Fred. L. Husmann, Rutherford, Cal.

PERFECTION CurrANT.

[PLATE LIV.]

This variety was originated by Mr. C. G. Hooker, of Rochester, N. Y., from seed of the Fay, the blossoms of which were crossed with White Grape in the spring of 1887. It was the best of a lot of 25 seedlings of same parentage, and after being held under observation by the originator for several years, was first propagated for experimental distribution about 1895. Its value having been satisfactorily established through several years of comparative tests beside other varieties, and after critical examination for three years by a committee of the Western New York Horticultural Society, it was awarded the Barry gold medal of that society in 1901 for a new fruit of superior merit. It was commercially introduced by Messrs. C. M. Hooker & Sons, of Rochester, N. Y., in 1902, and has been favorably reported upon by experiment stations and growers in several of the Northern and Eastern States.

DESCRIPTION.

Cluster long, cylindrical, tapering but slightly, with a long stem; berries spherical, uniformly large, adhering tenaciously to the short, stout pedicels; color bright crimson; skin thin, moderately tough; flesh tender, translucent, juicy; seeds medium in size and number; flavor sprightly subacid; quality good to very good, both for dessert use in the fresh state and for cooking.

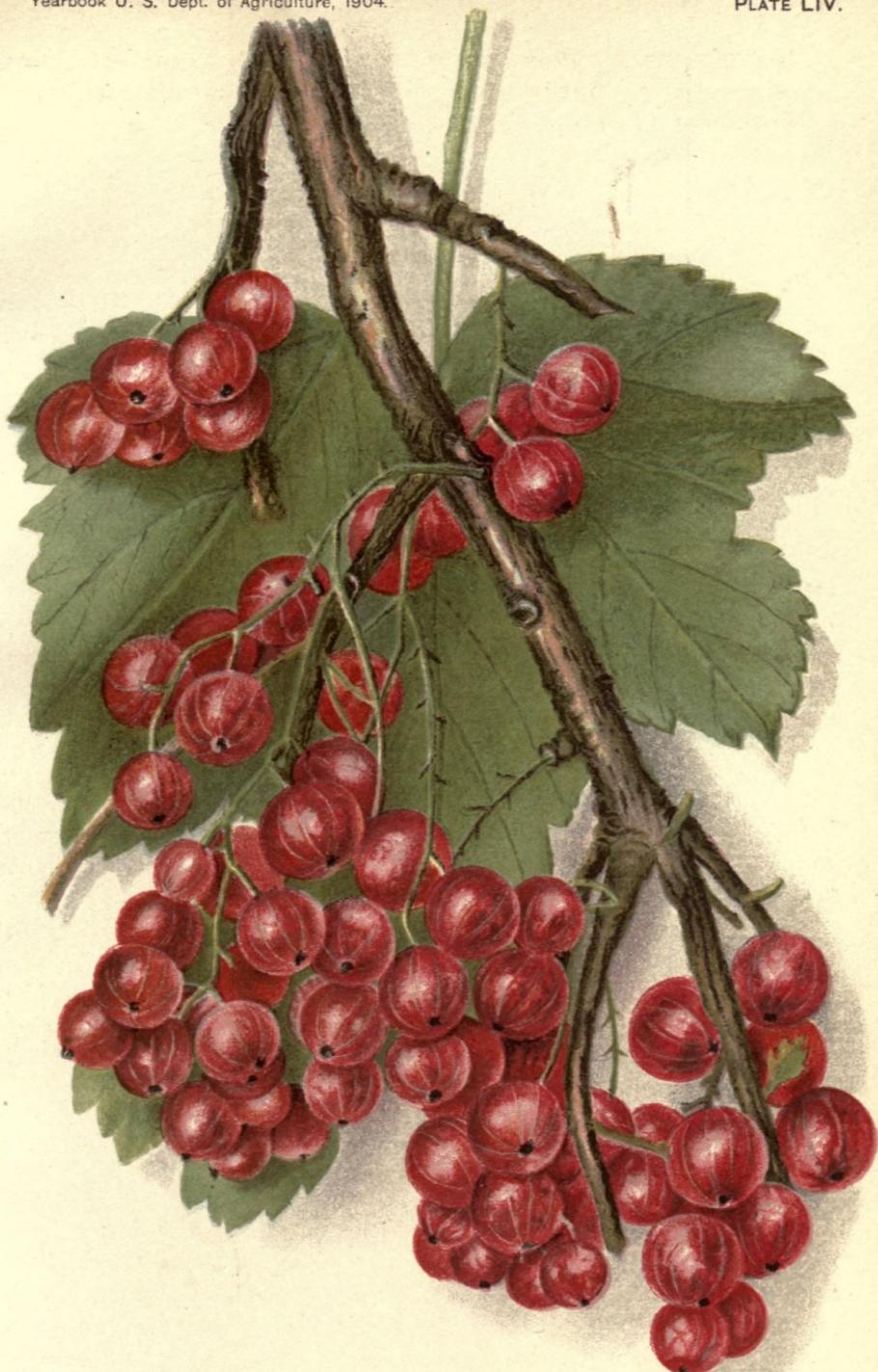
Bush a moderately strong grower with good foliage; bears its fruit chiefly on the old wood like its staminate parent, the White Grape.

The specimens illustrated on Plate LIV were grown by Mr. C. G. Hooker at Rochester, N. Y.

DELMAS PERSIMMON.

[PLATE LV.]

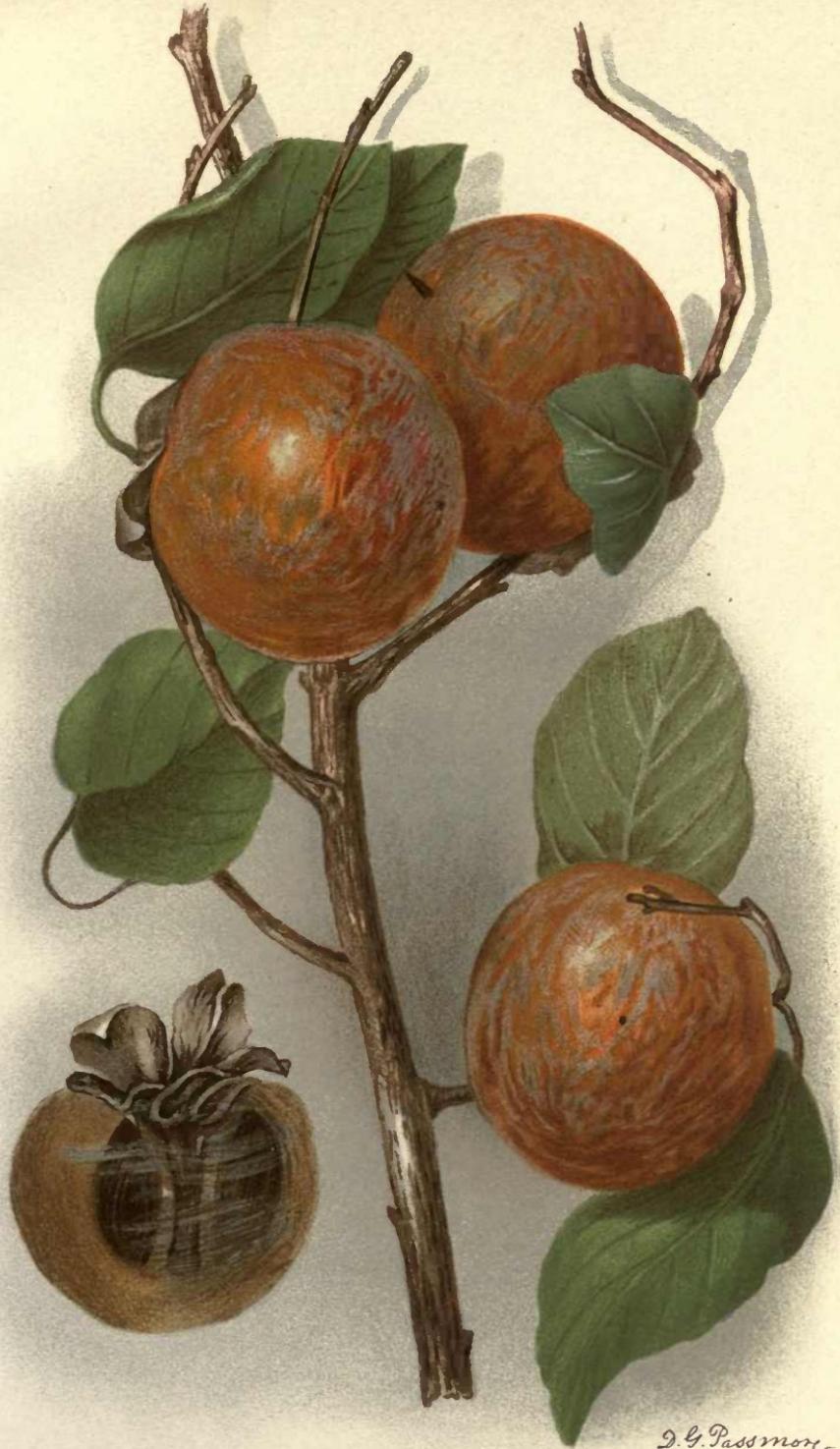
The native persimmon of the Southern and Eastern States, *Diospyros virginiana*, has but recently begun to receive the attention of cultivators, although wild trees yielding fruit of exceptionally fine quality or possessing other important characteristics have long been known to individuals in many portions of its range. In fact, until its larger fruited relative the kaki, or Japanese persimmon, was introduced and fruited in many parts of the South the intrinsic merit of the native species, and its inherent value as a fruit possessing large capabilities of



PERFECTION CURRANT.

SACRETT & WILHELM'S LITHO & PTO. CO., N.Y.

D. G. Passmore



D. G. Passmore

DELMAS PERSIMMON.

improvement through selection of wild varieties already existing, seems to have been overlooked. Attention has been called to several choice varieties, in the reports of the Pomologist of the Department of Agriculture from time to time, especially to Early Golden, Golden Gem, and Marion. At the present time not fewer than 35 varieties have received names and are being grown in an experimental way.

One of the best of these varieties that have reached the office of the Pomologist is the Delmas, a native seedling on the grounds of Mr. A. G. Delmas, of Scranton, Miss., who, after observing its superior quality for some twenty years, planted 26 suckers from it in orchard form in a suitable location on his place in 1899. These trees, which were in bearing in 1902, attracted the attention of the writer in November of that year by their good size, handsome appearance, and fine quality. Later Mr. Delmas furnished the Department scions for experimental distribution, so that the variety is now under test in several localities.

DESCRIPTION.

Form roundish oblate; size medium to large; surface smooth; color reddish yellow, covered with a thin whitish bloom, remaining bright when full ripe; cavity regular, of medium size and depth; calyx, consisting of four medium-sized bluish green sepals, somewhat reflexed when fruit is ripe; apex slightly protruding; skin thin, tenacious; flesh yellowish, translucent, meaty; flavor sweet and rich; quality very good; seeds 7 or 8, rather large, dark brown. Season, October and early November, in southern Mississippi.

The tree is a strong grower, of upright habit, with large leaves. It is very precocious and productive. The variety is considered especially promising for experimental commercial planting in the Gulf States, because of its productiveness and the large size, bright and durable color, and fine quality of the fruit.

The specimens illustrated on Plate LV were grown by Mr. A. G. Delmas, of Scranton, Miss.

PECANS.

[PLATES LVI AND LVII.]

Of our native nut-bearing trees none promises to become of such pomological importance as the pecan. Within the region to which it is well adapted for cultivation, which may be roughly stated as the Mississippi Valley below St. Louis, the South Atlantic, and the Gulf States, including Texas, no other nut tree, either foreign or introduced, can be considered as fairly in competition with it. Though long neglected as a possible profitable orchard tree, it has, during the past fifteen years, assumed considerable importance, and extensive orchards have been planted in most of the Southern States. Previous to about

1900 most such orchards were planted with seedling trees or with nuts of particular varieties, which were placed at desired orchard distances and allowed to germinate and grow where the future trees were to stand, thus avoiding the transplanting process. As the earlier seedling orchards have come into bearing it has become increasingly apparent that the seedlings from trees of those exceptionally fine varieties which the orchardist desires to perpetuate vary too greatly from their parent types to be of much commercial value. Such seedlings rarely bear nuts closely similar to the parent in size, form, color, thinness of shell, plumpness of kernel, or dessert quality, and still more rarely do they reproduce the desired productiveness, ripening time, or other important characteristics that determine the commercial value of the tree. The necessity of relying upon budded and grafted pecan trees for commercial orchards is now very generally recognized by intelligent planters, so that at the present time few seedlings are being planted.

Unfortunately, much confusion exists among growers as to the exact identity and proper nomenclature of several of the leading sorts. This is partially due to the fact that for many years the locations of the original trees were not known to the general public, and partially to the fact that in certain instances deliberate renaming of varieties previously introduced was practiced by certain nurserymen and dealers in seeds and trees. The situation has been further complicated by a somewhat general practice of selling seedling trees under the names of the varieties from which they were grown. The result of these practices is that many and diverse forms of the pecan are now found in orchards throughout the South under the names of some of the best-known sorts. These practices are now discouraged by the leading nurserymen and orchardists, and it is hoped that, through the educational campaign which has been inaugurated by the National Nut Growers' Association through the adoption of the code of nomenclature of the American Pomological Society and its application to the names of nut varieties in catalogues and other publications relating to the subject, these productive causes of confusion in the names and identity of varieties will soon cease to operate.

With a view to determining the exact identity of the varieties that have been longest introduced to cultivation, the ten sorts that have been advertised and propagated for a sufficient time to attain a wide distribution among planters are illustrated on Plates LVI and LVII. The writer has visited the localities where these varieties originated, and in the case of all except the Centennial (the original tree of which was destroyed in 1890) has inspected and photographed the original trees. The effort has been to illustrate nuts that fairly represent characteristic specimens of the varieties, including thickness of

shell and form, color, and plumpness of kernel, as well as the external characteristics. In all cases the nuts illustrated are from trees grown in the climatic regions where the varieties originated.

CENTENNIAL PECAN.

[PLATE LVI.]

The original tree of this variety stood on the Anita^a plantation of Mr. Amant Bourgeois, on the east bank of the Mississippi River, in St. James Parish, La., from some date early in the nineteenth century until March 14, 1890, when it was destroyed by the disastrous Anita crevasse, which swept away, to the depth of 15 feet, the earth in which it stood. Whether it was a chance seedling or was grown from a planted nut is not known. So far as known, the first effort to perpetuate the variety by grafting was made by the late Dr. A. E. Colomb early in the "forties." Not succeeding in this effort, Doctor Colomb later cut scions from the original tree and took them to the late Telesphore J. Roman, owner of Oak Alley plantation, on the east bank of the river, whose slave gardener, Antoine by name, succeeded in grafting 16 trees near the mansion and quarters with this variety in the winter of 1846 or 1847. Somewhat later than this Mr. Roman had 110 trees grafted "in the large pasture which was forty arpents from the river" with the same variety, so that by the close of the civil war (1865) there were 126 grafted Centennial trees in bearing on this plantation. The plantation having changed hands shortly after the war, the later plantings of grafted trees were cut down to make way for sugar cane, although they were just reaching their most productive age and the nuts from them were then selling at from \$50 to \$75 per barrel.^b

In 1876, Hubert Bonzano, who then owned Oak Alley, exhibited nuts from these grafted trees at the Centennial Exposition in Philadelphia. He was awarded a diploma based upon an examination by Prof. William H. Brewer, in which the variety was commended for its "remarkably large size, tenderness of shell, and very special excellence."^c

It is not clear as to who first applied the name Centennial to the variety, but so far as ascertained it was first catalogued under that name by the late Richard Frotscher, of New Orleans, in 1885, the propagation of budded and grafted trees of it for sale having been begun about 1882 by William Nelson, who was associated with Mr. Frotscher in the pecan nursery business.

^a Personal statement of Emil Bourgeois, Central, La., October, 1902.

^b Letters of Henry J. Roman and Prof. Alcée Fortier, of New Orleans, son and nephew, respectively, of Telesphore J. Roman, May to August, 1903.

^c U. S. International Exhibition 1876, Reports and Awards. Group VI, Award 222, p. 46. Philadelphia, 1877.

So far as ascertained, the Centennial is the first variety of pecan that was successfully propagated by budding or grafting. It was also the first variety planted in commercial orchard form, with a definite view to producing nuts for sale, and one of the first three to be catalogued and offered for sale.

Two of the earliest grafted Centennial trees, above referred to, are still standing at Oak Alley. They were thrifty, productive, and in fine condition when inspected by the writer in the autumn of 1902. The date of their grafting by the slave Antoine (1846 or 1847), under Doctor Colomb's direction, marks the beginning of modern pecan culture.

DESCRIPTION.

Size large, average nuts running about 45 to 50 to the pound; form long, compressed cylindrical, gradually tapering to the wedge-shaped apex; base conical; color bright grayish brown with rather scanty purplish splashes toward apex; shell rather thick, partitions thin; cracking quality medium; kernel clear, reddish yellow, deeply and narrowly grooved, but quite smooth and separating easily from the shell; plump, solid; of delicate texture and flavor, quality very good.

The Centennial tree is a rather slender grower with grayish green young wood sprinkled with small light dots. It becomes pendulous as it attains age, and is on this account one of the handsomest varieties for parks or large lawns. It is slow to come into bearing, but appears to be a fairly regular cropper after attaining an age of about 15 years from bud or graft.

The specimens illustrated on Plate LVI were from one of the two surviving trees that were grafted in 1846-47 on Oak Alley plantation, Feitel, St. James Parish, La. They were furnished by the present owner of the plantation, Mr. A. M. Sobral.

FROTSCHER PECAN.

(SYNONYMS: *Eggshell*, *Frotscher's Eggshell*, *Olivier*, *Majestic*.)

[PLATE LVI.]

This variety was originated by the late Oscar Olivier in his garden beside the Bayou Teche at Olivier, Iberia Parish, La. The original tree, now owned by H. J. Pharr, is still healthy, vigorous, and productive. Its exact age is not known, but the indications are that it was planted subsequent to 1860. It appears to have been first propagated about 1882 by William Nelson, and first catalogued by the late Richard Frotscher as "Frotscher's Eggshell," in 1885. Locally it is still known as the "Olivier" pecan, in honor of its originator.

DESCRIPTION.

Size large, averaging about 45 to 50 nuts per pound; form cylindrical oval with broad, rounded base and blunt quadrangular apex; suture rather indistinct; color bright yellowish brown, with scattered purplish black splashes toward apex; shell thin to very thin, with thin partitions; cracking quality excellent; kernel brownish yellow, often shrunken, showing dark veins even in the fresh nuts; texture rather dry and coarse; flavor pleasant; quality medium.

The tree of Frotscher is a strong grower, of broadly spreading and sprawling habit, the young wood bright brownish green in color and conspicuously dotted. The variety is precocious and productive, but the faulty character of many of its kernels and their stale appearance, even when perfectly fresh from the tree, materially lessen its value as a commercial variety.

The tree characters of Frotscher are quite clearly reproduced in its seedlings, and, as many of these have been planted throughout the South, there is much confusion regarding the variety.

The specimens illustrated on Plate LVI were grown by Mr. B. M. Young, Morgan City, La.

JEWETT PECAN.

[PLATE LVI.]

The original Jewett pecan tree was grown from a nut planted on what is now known as the Wilcox place, 1½ miles north of Scranton, Miss., by the little son of Charles M. Cruzat, about 1881, it being the only one obtained from a half dozen nuts purchased in New Orleans at a cost of 50 cents. Mr. Cruzat has no information regarding the source of the nuts which he purchased, but remembers that they were large, fine-looking pecans. The tree commenced bearing at the age of 7 years, and attracted the attention of the late Col. W. R. Stuart, of Ocean Springs, Miss., who purchased the crops for several years and cut scions for grafting in nursery. He introduced the variety in the form of grafted trees in 1893, naming it Jewett, in honor of Col. Stephen Jewett, of Crosby, N. C. The original tree is still standing, and is about 4 feet 7 inches in circumference, but is affected by a bark disease to which the variety appears specially susceptible, and is now bearing but light crops of nuts.

DESCRIPTION.

Size large to very large, varying from 45 to 55 nuts per pound; form long, angular, obovate, often constricted at middle, with a blunt quadrangular apex, which is often curved and beaklike; suture quite distinct; color dull reddish brown, with many purplish splashes, sometimes extending the full length of the nut; shell rather thick, with thin

partitions, cracking easily but adhering to the kernel; kernel long, wedge shaped, rather broadly grooved, bright in color, rather coarse in texture, and only fairly good in quality.

The Jewett tree is an erect, strong grower when young, and is at least fairly productive. It is apparently very susceptible to a bark disease which has attacked the original tree and many of those propagated from it. Aside from the large size and striking appearance of a portion of its crop there appears to be little to commend it to planters.

The specimens illustrated on Plate LVI were grown by the Stuart Pecan Company, Ocean Springs, Miss.

PABST PECAN.

[PLATE LVI.]

The original tree of the Pabst pecan is one of a number of seedlings on the grounds of the late William B. Schmidt, of New Orleans, at his country place at Ocean Springs, Miss. These trees were grown from nuts from unknown sources obtained in New Orleans about 1875. The Pabst tree proved to be an especially strong grower, yielding nuts of large size and plump kernel, and was first propagated by Mr. Charles E. Pabst, of Ocean Springs, in 1890. It was named in 1893 in honor of Mr. Pabst by Mr. B. M. Young, of Morgan City, La., who has done much to clear up the uncertainties regarding names and to determine the relative merits of pecan varieties.

The Pabst tree was over 5 feet in circumference when badly damaged by a severe wind and rain storm October 9, 1893, which destroyed most of its top. It has been replaced by two thrifty sprouts from the root of the original tree, which in 1903 were good-sized trees, 27 and 21 inches in circumference, respectively, and bearing nuts.

DESCRIPTION.

Size large, averaging about 45 to 55 nuts per pound; form short, cylindrical, with a very blunt, broadly grooved apex; color dull gray, heavily splashed with purplish black; shell thick, hard; partitions rather thick; cracking quality medium; kernel plump, smooth, with broad grooves, bright straw color; texture fine; flavor delicate; quality very good.

The Pabst is a very sturdy, upright tree with stocky gray-green young wood, sparsely sprinkled with large dots. It appears to be fairly productive where it has been under test for a sufficient time to test its bearing habit.

The specimens illustrated on Plate LVI were grown by Mr. Charles E. Pabst, Ocean Springs, Miss.

POST PECAN.

(SYNONYM: *Post's Select*, in part.)

[PLATE LVII.]

The original tree of the Post pecan is a wild seedling on the farm of Mr. H. B. Freeman, on the Colorado River bottom, in San Saba County, Tex., near Milburn, McCulloch County. The farm was formerly owned by a Mr. Post, by whose name the variety was locally known prior to 1891, when Mr. Herbert Post, of Fort Worth, Tex., began purchasing the crop and advertising it and other pecans widely under the trade name "Post's Select." Little effort appears to have been made to perpetuate the variety by grafting until a comparatively recent date.

When examined by the writer in November, 1903, the original tree was in fairly thrifty condition, and had a circumference of 9 feet 8 inches at 18 inches from the ground. Its crop has varied from 1½ to 11 bushels per annum in recent years.

DESCRIPTION.

Size medium, averaging about 65 to 75 nuts per pound; form compressed, short, obovate, with a rather blunt, conical apex; color bright reddish yellow, showing very few purple splashes; shell thick, partitions thick, cracking quality medium; kernel clear, bright straw color, but deeply grooved and wrinkled; texture firm, compact, fine grained; flavor delicate; quality good.

The original Post tree is a moderately strong, upright grower, with rather slender, bright young wood with numerous small dots, and is quite regularly productive. The variety has been fruited on buds or grafts in but few places, and its behavior outside of the locality of its origin can not yet be determined.

The variety described is the true Post. In recent years an entirely distinct sort, the Hollis, which originated at Bend, San Saba County, Tex., and is a larger and apparently superior nut, has been distributed by the introducer under the name "Post's Select."

The specimens illustrated on Plate LVII were furnished by Mr. E. W. Kirkpatrick, of McKinney, Tex. They were from the original tree.

ROME PECAN.

(SYNOMYS: *Century*, *Columbia*, *Columbian*, *Mammoth*, *Pride of the Coast*, *Southern Giant*, *Twentieth Century*.)

[PLATE LVII.]

The original tree of the Rome pecan was grown from a nut planted by the late Sebastian Rome in his garden at Convent, St. James Parish, La., about 1840. The source from which the nut which he

planted was secured is not known. The variety appears to have been first propagated by Mr. William Nelson, who took scions from the tree about 1882, and it was first catalogued by Richard Frotscher in 1885 under the name "Rome." About 1883, the late Emil Bourgeois, of Central, La., secured scions from the original tree and top-grafted some seedling trees at his home on Ravidan plantation in the same parish. There it was christened "Pride of the Coast," and soon thereafter Mr. Bourgeois began its propagation in nursery under that name. This variety yields the largest nuts of any yet brought to notice, and has therefore been the subject of deliberate renaming by nurserymen and seedsmen more frequently than any other. This accounts for the diversity and number of its synonyms.

The original tree of the Rome is still standing in the Rome garden at Convent, La. It has been in a state of decrepitude for several years, and now yields but light crops of nuts, many of which have imperfect kernels.

DESCRIPTION.

Size variable, large to very large, 40 to 55 nuts per pound, selected samples running as large as 25 per pound; form oblong or cylindrical oval, tapering gradually to the wedge-shaped apex; color grayish, often heavily splashed and spattered with purplish black over most of the surface; shell thick, hard; partitions thick; cracking quality poor; kernel often shrunken or entirely "false;" color bright, texture rather coarse and dry; flavor fair, quality good when plump and well filled, but usually quite indifferent.

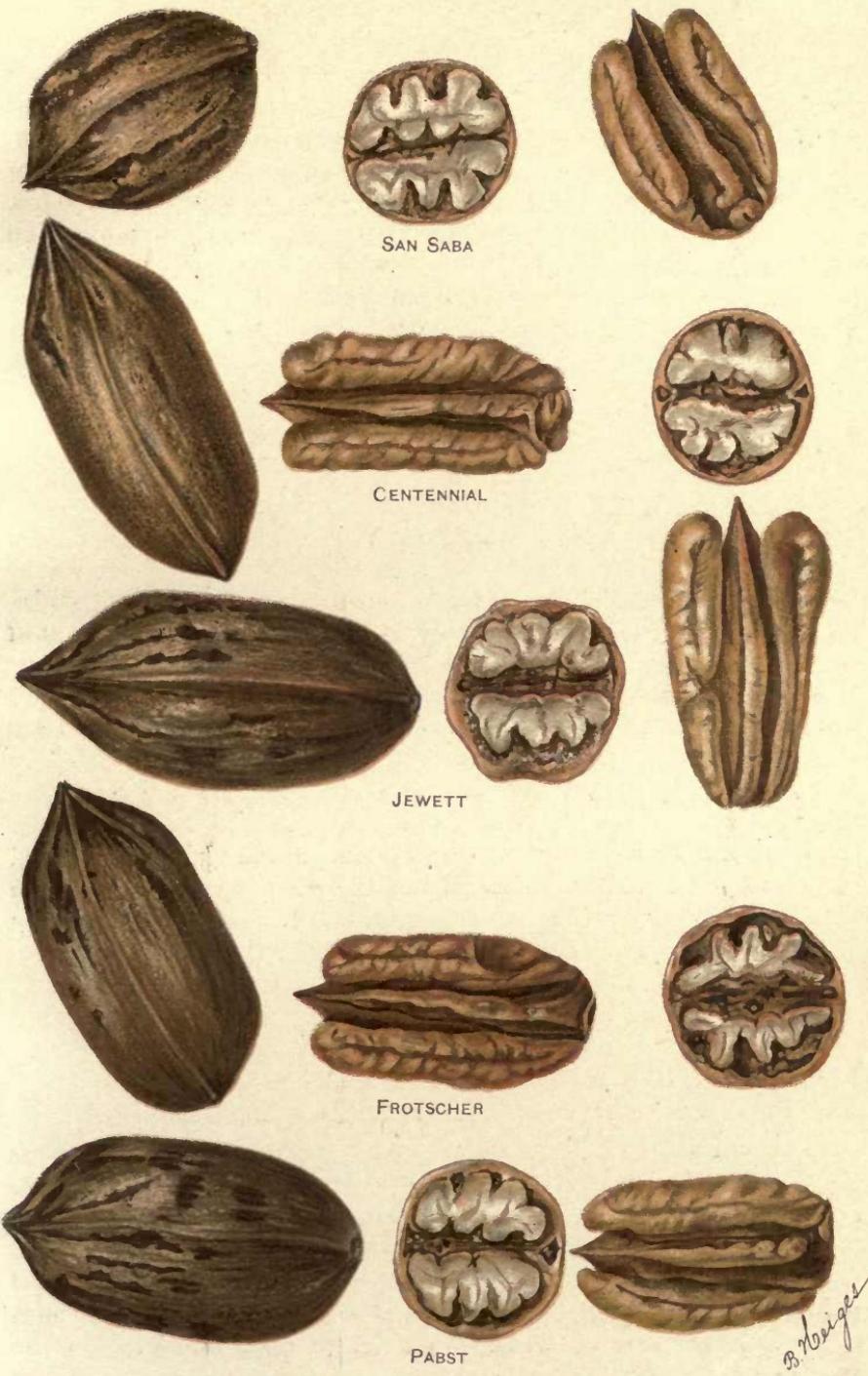
The Rome tree is an erect, fairly strong grower, with rather stout bluish-green young wood. It occasionally bears large crops, but is erratic in this respect, and at most points where it has been tested a large proportion of the kernels are defective. Aside from the fact that a portion of the crop is of extraordinary size, there is little to commend it to the planter.

The specimens illustrated on Plate LVII were grown by Paul E. Bourgeois, Central, La.

RUSSELL PECAN.

[PLATE LVII.]

The Russell pecan tree, like all others at Ocean Springs, Miss., was grown from planted nuts, that locality being below the native range of the species in that section. This tree was one of a lot of seedlings grown by the late Col. W. R. Stuart, of Ocean Springs, Miss., about 1875, from nuts secured by him from James Moore, a blacksmith of that village. The exact source from which Moore secured the nuts is not known. Colonel Stuart sold five of these seedling trees to Peter Madsen, who planted them in his garden, now the property of



PECAN VARIETIES.



Post



VAN DEMAN



RUSSELL



STUART



ROME

PECAN VARIETIES.

Mrs. H. F. Russell. Of the five trees, four produced nuts of good size and thin shell, the largest and thinnest shelled one receiving the name Russell from Mr. Charles E. Pabst, who first propagated it in 1894. The tree is a fairly regular bearer, averaging about 150 pounds of nuts per annum, and, though receiving little care or attention, is a healthy, vigorous tree at present writing. It has attained a high local reputation on account of its exceptionally thin shell and regularity of bearing.

DESCRIPTION.

Size medium to large, 55 to 60 nuts per pound; form compressed, oval, tapering to a long, sharp apex and a rather pointed base; color grayish brown, with narrow splashes and spatters of purplish black; shell very thin, partitions very thin and fragile, cracking quality excellent; kernel broadly grooved, rather dark straw color, often lacking in plumpness and defective at tip, texture rather dry, flavor pleasant, quality good.

The tree is rather pendulous in habit, with slender, dark, conspicuously dotted young wood, bearing regularly and well, so far as tested.

The specimens illustrated on Plate LVII were grown by Mr. Charles E. Pabst, Ocean Springs, Miss.

SAN SABA PECAN.

(SYNONYMS: *Paper Shell*, *Risien's Paper Shell*, *Royal*.)

[PLATE LVI.]

The original San Saba tree is a native seedling on the San Saba River bottom, near the intersection of that stream with the Colorado of Texas. It came to the notice of Mr. E. E. Risien, its present owner, as the result of the offer of a \$5 premium by him for the best pecan that should be brought to him with the privilege of purchasing its crop. He was so impressed with the superiority of this one that he purchased the farm upon which it stands in order to secure the tree, although he found that it had been so ruthlessly stripped of its top with ax and saw in harvesting the crop that only a single branch remained. After repeated failures in his attempts at grafting, Mr. Risien developed a method of annular budding, which is very successful with him, and which has enabled him to transform the tops of many large wild pecan trees into this choice sort, as well as to bud young seedlings in nursery for transplanting to orchard.

Mr. Risien formally introduced the variety under the name San Saba about 1893. The original tree is at present a fine, healthy specimen, with a girth of 9 feet 6 inches, bearing an average crop of about 180 pounds of nuts.

DESCRIPTION.

Size small to medium, averaging about 85 to 90 nuts per pound; form varying from long oval to oblong, with blunt apex; color bright, reddish yellow, strongly splashed toward apex with purplish black; shell very thin and brittle, though quite dense in texture; partitions thin; cracking quality very good; kernel plump, bright straw color, smooth and broadly grooved, almost invariably well filled; texture delicate, solid, fine grained; flavor very delicate; quality best.

The tree is a short-jointed, rather slender grower, enormously productive in the vicinity of its place of origin. It has not yet been fruited elsewhere to any extent, but is considered one of the best high-grade dessert varieties. On account of the thinness of shell, the nuts should be packed in relatively small boxes when shipped to avoid cracking in transit. Its small size is its only conspicuous fault.

The specimens illustrated on Plate LVI were grown by Mr. E. E. Risien, San Saba, Tex.

STUART PECAN.

(SYNONYM: *Castanera*.)

[PLATE LVII.]

The original tree of this, which is generally considered the most widely successful pecan variety yet introduced and tested, stood in a garden at Pascagoula, Miss., now owned by Capt. E. Castanera.

It is supposed to have grown from a nut brought from Mobile, Ala., by John R. Lassabe and planted about 1874.^a It early acquired local celebrity on account of its productiveness and the beauty and fine quality of its product, its average yield from 1889 to 1892 being about 140 pounds per annum. In 1892 it yielded about 350 pounds of nuts, most of which were sold by Charles M. Cruzat, who then held the place under lease, at \$1 per pound. It was first propagated by Mr. A. G. Delmas, of Scranton, Miss., who cut scions in 1886. Out of some sixty grafts inserted he secured one tree, which still survives in his garden. John Keller, then associated with Col. W. R. Stuart, of Ocean Springs, Miss., in the pecan-nursery business, secured scions from the tree about 1890, from which trees were propagated in nursery by them. The trees of the variety were offered for sale by Colonel Stuart about 1892, under the name Stuart, which had been suggested for it by Prof. H. E. Van Deman, then Pomologist of the Department of Agriculture, who was unaware of the name previously applied to it in the locality where it originated. Under the name Stuart it received wide advertising and distribution, so that it is one of the most widely disseminated varieties throughout the South. The original tree in Captain Castanera's garden was blown down in October, 1893, by the same storm

^a Letters from Charles M. Cruzat, 1903.

which destroyed the top of the original Pabst tree at Ocean Springs. Some two years later a sprout from one of the roots appeared, which has developed into a symmetrical young tree, which bore its first nuts in 1902.

DESCRIPTION.

Size large to very large, averaging about 40 to 50 nuts per pound; form cylindrical, slightly compressed, with rather blunt apex and rounded base; color brownish gray, moderately splashed and dotted with purplish black; shell moderately thin; partitions thin and fragile; cracking quality very good; kernel bright, moderately smooth, plump, rather narrowly grooved; texture firm, fine grained, solid; flavor delicate, rich; quality very good.

The tree of Stuart is a strong, upright, spreading grower, with moderately stout young wood, grayish green in color, rather sparsely dotted with oval dots. It is proving regularly and abundantly productive in most localities where it has been fruited, and is apparently succeeding over a wider climatic range than any other sort thus far tested.

The specimens illustrated on Plate LVII were grown by the Stuart Pecan Company, Ocean Springs, Miss.

VAN DEMAN PECAN.

(SYNONYMS: *Bourgeois*, *Duminie Mire*, *Mire*, *Mere*, and *Meyer* erroneously; *Paragon* in part, *Southern Beauty*.)

[PLATE LVII.]

The original tree of this variety was grown from a nut planted by the late Duminie Mire, of Union, St. James Parish, La., in 1836. Mr. Mire, then 25 years of age, secured nuts from a highly esteemed tree on the adjoining place of Mr. Gravois, which he planted in the garden surrounding his dwelling. Of the several trees that resulted from this planting only the one described here is considered worthy of perpetuation. Mr. Mire informed the writer, in October, 1902, that the product of this one closely resembles the nuts planted. This tree, which is locally known as the "Duminie," or "Duminie Mire," attracted the attention of the late Emil Bourgeois, who, about 1877, cut scions from it for propagation. Although this was his first effort at grafting, he succeeded in getting 11 scions to grow out of 22 that he set as top grafts on seedling trees near his residence on Rapidan plantation. When these grafts began bearing he commenced propagating young trees for planting in orchard form and for sale to the near-by planters, among whom it is known as the "Duminie Mire" pecan to this date.

A considerable quantity of nuts and some scions from these grafted trees having passed into the hands of Col. W. R. Stuart, of Ocean

Springs, Miss., about 1890, he renamed the variety Van Deman, in honor of Prof. H. E. Van Deman, then Pomologist of the Department of Agriculture. Since 1892 it has been widely advertised and distributed under that name, which has now become so firmly fixed in the literature of the subject as to make a return to the earlier local name inadvisable at this time.

About 1900, nuts and grafted trees of the variety were placed on the market by Herbert Post, Fort Worth, Tex., under the name Paragon.

The original tree still stands in the Mire garden, close to the Mississippi River levee, at Union Post-Office, La., and when inspected by the writer in October, 1902, was a beautiful, thrifty tree, measuring 7 feet 6 inches in circumference, and bearing from 200 to 300 pounds of nuts per annum.

DESCRIPTION.

Size large to very large, averaging 45 to 55 nuts per pound; form long, compressed, with a rather sharp base and a long, sharp apex, often slightly curved; color rather dark, reddish brown; slightly splashed with purplish black, especially toward apex; shell moderately thin, partitions rather thick but brittle; cracking quality fair; kernel long, narrowly grooved, generally plump, except at tip; color bright, clean, attractive; texture firm, fine grained; flavor delicate, rich; quality very good.

The Van Deman tree is of strong, moderately erect habit, with grayish-green young wood showing inconspicuous dots, and is a regular and abundant bearer in the locality of its origin. It does not thus far appear to be as productive elsewhere nor to fill out its kernels as well.

The specimens illustrated on Plate LVII were grown by Mr. Paul E. Bourgeois, Central, La.

M. L. D. 1905

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J.W.T.

PROMISING NEW FRUITS.

BY

WILLIAM A. TAYLOR,

Pomologist in Charge of Field Investigations, Bureau of Plant Industry.

[REPRINT FROM YEARBOOK OF DEPARTMENT OF AGRICULTURE FOR 1905.]

THE PRACTICAL DICTIONARY

BY J. A. MARSHALL

Editor of the *Practical Dictionnaire de la Langue Francaise*

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STRUCTURE

STRUCTURE

PROMISING NEW FRUITS.

By WILLIAM A. TAYLOR,

Pomologist in Charge of Field Investigations, Bureau of Plant Industry.

INTRODUCTION.

In a country like the United States, which embraces so wide a range of climatic and soil conditions, the origination and dissemination of fruit varieties is a very important phase of economic pomology. Without the origination of varieties adapted to peculiar regional conditions, there are few sections in which profitable commercial fruit culture can be permanently maintained. A considerable degree of adaptability to climate, resistance to particular diseases or insects, and suitability for special uses is essential to the profitable maintenance of fruit plantations in the open air in most of our territory. While a few varieties of most cultivated fruits possess a high degree of endurance of varying conditions, such varieties are usually of rather inferior quality and not well suited to highly specialized uses. Until a sufficient number of American-grown sorts has been accumulated our fruit growers must continue to test such new sorts as give promise of meeting their special needs. The present article of this series^a calls attention to some of the more recently introduced varieties that appear to possess distinct merit for testing in different fruit districts.

VIRGINIA BEAUTY APPLE.

[PLATE LVIII.]

This excellent winter variety appears to have originated early in the last century as a chance seedling on the farm of the late Mr. Zachariah Saferight, now owned by Mr. C. C. Edwards, in Carroll County, Va., which was then a part of Grayson County. The original tree, which is still standing, is reported to have borne fruit in 1826. Soon after that date the variety was disseminated throughout Carroll, Grayson, Wythe, and Pulaski counties by Mr. Martin Stoneman, who used scions of it for top-grafting trees in orchards on various farms.^b Old men in that region state that it was known to them as a disseminated variety in their boyhood. It was first disseminated under the names "Zach" and

^aSee Yearbooks of the Department of Agriculture for 1901 (p. 381), 1902 (p. 469), 1903 (p. 267), and 1904 (p. 399).

^bLetters of R. M. Crockett, Pulaski, Va.; Prof. William B. Alwood, Blacksburg, Va.; H. C. Wysor, Dublin, Va.; J. W. Stoneman, Cap, Va., and S. D. Stoneman, Gambetta, Va., 1901-6.

"Zach Red," but as neither of these appears to have been published they are not admitted as synonyms. About 1850 Mr. Stoneman named the variety "Virginia Beauty," under which name it appears to have been first catalogued and offered for sale soon after 1871 by the Franklin Davis Nursery Company, then of Richmond, Va., which began its propagation in nursery in that year.^a So far as known, it has no published synonyms. The earliest published description appears to be that contained in the Report of the Pomologist of the Department of Agriculture for 1895, page 36.

Though apparently never extensively advertised or illustrated, the Virginia Beauty is now quite widely distributed throughout the mountain region of Virginia and North Carolina, and is recognized as a promising variety for like latitudes, at least as far west as eastern Nebraska. Its mild flavor, which closely approximates sweetness, is highly appreciated in southern markets, where the variety commands a premium on this account, and accordingly it is being considerably planted as a commercial variety in the mountain region referred to.

DESCRIPTION.

Form quite variable, ranging from oblate to roundish oblong; size medium to large; surface smooth, glossy; color dark yellow, almost entirely covered with purplish red, showing occasional dim stripes of darker red; dots variable, numerous, russet, some indented; cavity irregular, of medium size and gradual slope, sometimes lipped and usually russeted; stem short, rather stout, frequently bearing bracts; basin regular, small, shallow, slightly furrowed and lumpy; calyx segments thin, converging; eye medium, closed; skin moderately thick and tenacious; flesh greenish yellow, fine grained, tender, juicy; core medium to large, conical, clasping; seeds numerous, of medium size, short, plump, brown; flavor mild subacid, almost sweet; quality good to very good for dessert use in the fresh state and for baking. Season, October to February in the mountain region of North Carolina and Virginia.

The tree is reported to be a moderately strong, rather upright grower, becoming somewhat pendulous after reaching bearing age.

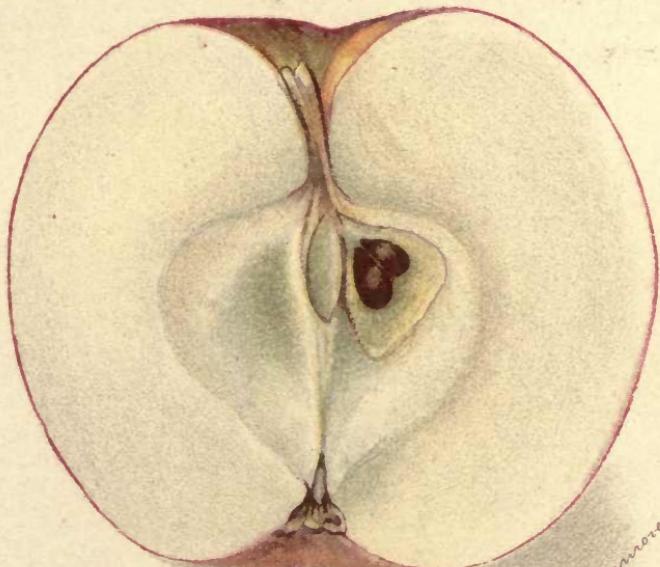
The specimen illustrated on Plate LVIII was grown near Taylorsville, Alexander County, N. C.

CARSON APPLE.

[PLATE LIX.]

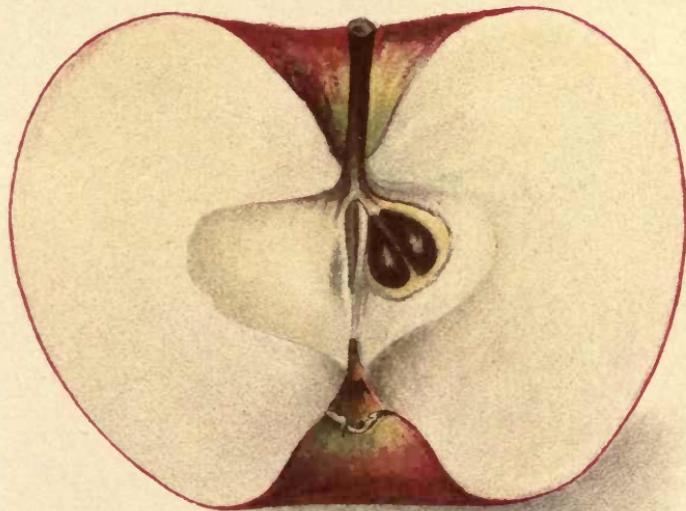
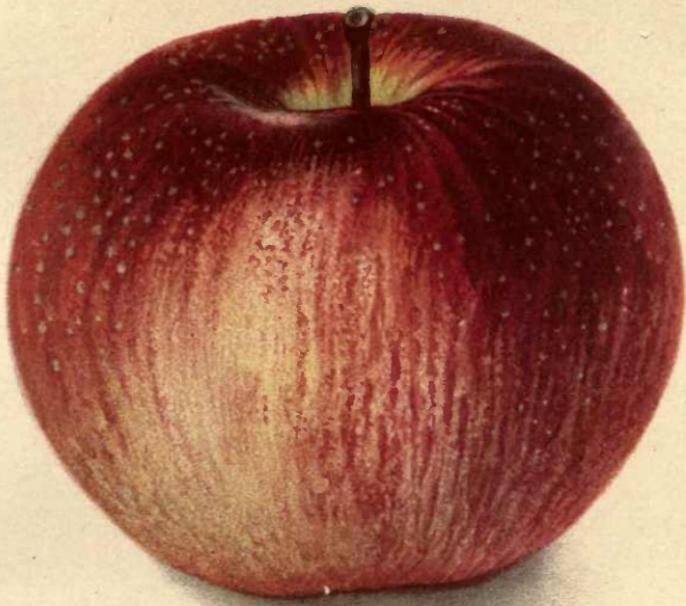
The original tree of this variety was obtained about 1835 by a relative of Mr. Nathan Moore, of Toledo, Ohio, from a small apple seedling nursery in Wood County, Ohio, owned by a family named Carson. When it came into bearing, about 1850, it was so attractive

^a Letter of W. T. Hood, Richmond, Va., March 28, 1906.



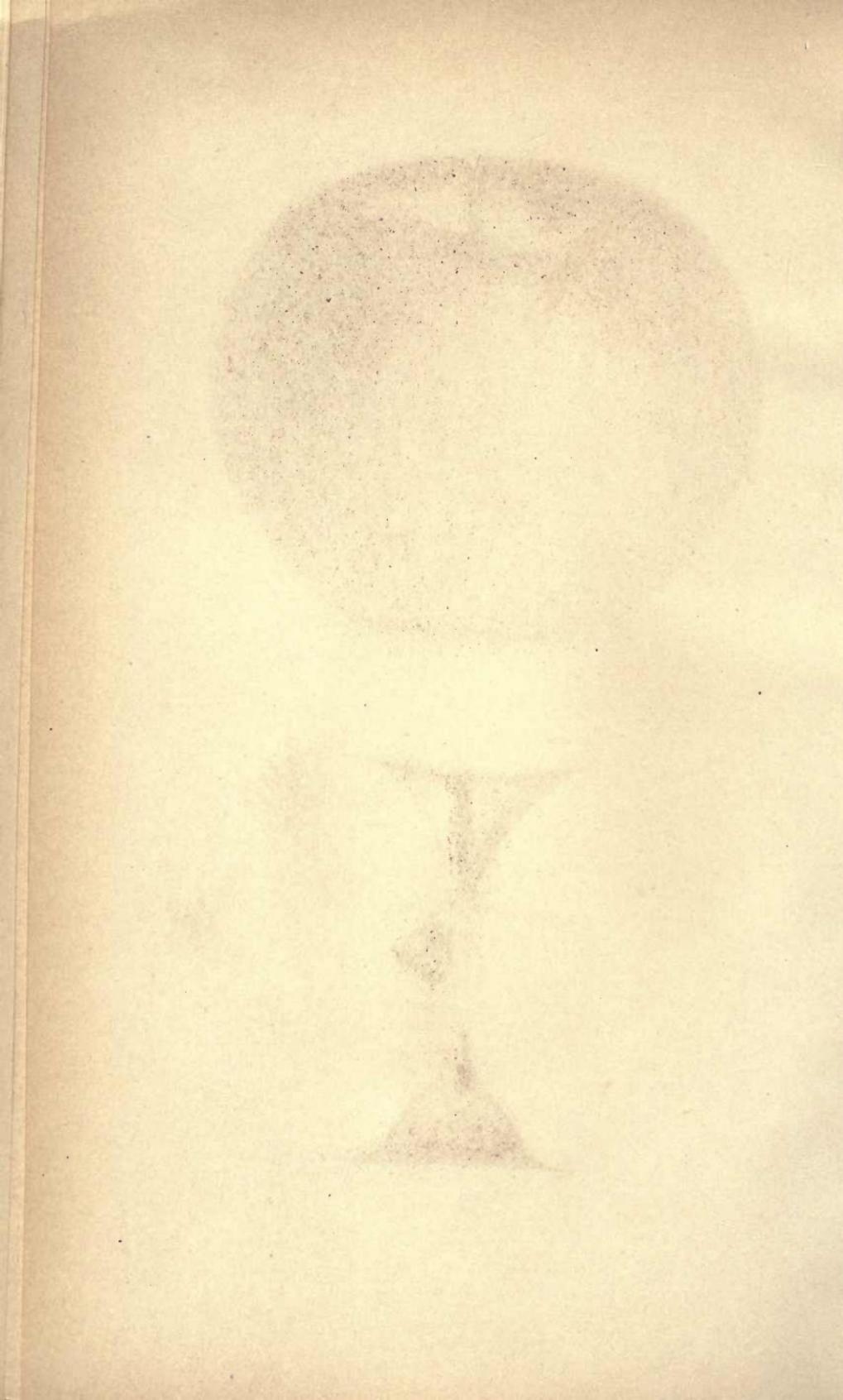
D. G. Passmore

VIRGINIA BEAUTY APPLE



CARSON APPLE.

JULIUS BIEN & CO. N.Y.





D.G. Ballou

CROCKER PEAR.



in appearance and of such excellent quality that Mr. Moore began its propagation and dissemination in northern Ohio about 1855 under the name "Carson," which it has ever since borne. The earliest publication of the name appears to have been in the report of the Kentucky State Fruit Committee in the Proceedings of the American Pomological Society for 1875 (p. 135), where it was recommended for planting in the central and southern portions of Kentucky. Its excellent record for productiveness, beauty, and quality in northern Ohio for a half century renders it worthy of experimental planting throughout the Lake region and the New England States, both for the home orchard and as a commercial variety.

DESCRIPTION.

Form oblate, sometimes slightly conical; size large; surface smooth, with occasional russet knobs and patches; color pale yellow, washed, splashed, and narrowly striped with bright crimson; dots rather large, conspicuous, and protruding; cavity medium, regular, deep, russetted; stem of medium length and rather slender; basin very large, deep, abrupt, furrowed, and sometimes russetted; calyx segments converging; eye large, closed; skin thin, tough; flesh yellowish, with satiny luster when fresh cut; texture fine, tender, juicy; core small, broad, oval, clasping, nearly closed; seeds few, plump, medium, brown; flavor subacid, pleasant; quality very good. Season, November to March in northern Ohio.

Tree vigorous and upright in habit, very productive.

The specimen illustrated on Plate LIX was grown near Toledo, Ohio.

CROCKER PEAR.

(SYNONYM: *Crocker Bartlett.*)

[PLATE LX.]

One of the most evident needs of the American commercial pear grower is an attractive winter variety of good dessert quality that is at the same time productive and at least fairly resistant to blight. Most of the European winter varieties thus far tested in this country have failed in one or more of these important particulars when transferred to America, so that the supply of desirable winter sorts is rarely equal to the demand of our domestic markets. One of the most promising new varieties in this field is the "Crocker," which appears to have originated in a small orchard planted by gold miners on the American River, near Loomis, Cal., about 1850 to 1860. This orchard, which consisted of about 4 acres of apples, pears, peaches, and plums, with some grapes and figs, was purchased by Mr. L. L. Crocker in 1872.^a It then contained a thicket of some 50 young pear

^a Letters of L. L. Crocker, February, 1905.

sprouts surrounding an older tree of an unrecognized winter variety. Desiring to clear the ground to make way for planting other trees, Mr. Crocker noticed fruit upon some of these young trees, which were evidently suckers from the stock upon which the old tree had been budded or grafted. He therefore deferred their destruction until the end of the season, to permit the fruit to ripen. The pears remained on the trees until December, when they began falling, although still hard and inedible. Specimens that were laid away ripened gradually from January until the end of winter and were of such excellent quality that Mr. Crocker transplanted five of the largest sprouts to his orchard, where they are still bearing annual crops. Later he began the nursery propagation of the variety, and gradually increased his plantings of it until he now has over 3,000 bearing trees. It is locally known as the "Crocker Bartlett," and has been disseminated under that name by Mr. Crocker since 1902. It has but recently begun to attract attention elsewhere, but is considered worthy of testing in eastern pear districts.

DESCRIPTION.

Form oblong, obovate, pyriform, somewhat angular; size medium to large; surface rather smooth; color rich golden yellow, somewhat netted and overspread with russet; dots minute, russet; stem medium to long, rather slender, inserted obliquely, with little or no depression; basin of medium size, regular, deep, abrupt, russeted, and furrowed; calyx segments rather small, converging; eye small, closed; skin rather thick, but quite tender; flesh yellowish, buttery, juicy, with some woody granules near core; core of medium size, oval, slightly open, meeting the eye; seeds short, plump, round, rather numerous; flavor mild subacid to sweet and very rich; quality very good.

The tree is reported to be a vigorous grower, thus far free from blight, and regularly productive. The fruit is somewhat subject to scab in the locality of its origin, and therefore needs to be sprayed to protect against this disease. Season, January to March in Placer County, Cal.

The specimen illustrated on Plate LX was grown at Loomis, Cal.

EVERBEARING PEACH.

[PLATE LXI.]

The so-called "Spanish" group of peaches, which is supposed to have been introduced into both Mexico and our own Gulf region by the early Spanish explorers and missionaries, is in some respects our most interesting group of peaches. It unquestionably attained wider distribution in the United States during the period of exploration and colonization which preceded the development of commercial peach culture



EVERBEARING PEACH.

JULIUS BREN & CO. N.Y.

than the so-called "Persian" group, to which most of our older cultivated varieties belong.

Hunters and trappers, and even the Indians, appear to have aided in the dissemination of these peaches in many sections, so that the early settlers in many parts of the Mississippi Valley and the Upper Lake regions found the type so firmly established in certain localities as to appear indigenous. From the Gulf to the Great Lakes it was thoroughly established by the beginning of the nineteenth century, reaching its northern limit of planting in orchard form, so far as known to the writer, in the so-called "Indian peach orchard" on the Kalamazoo River, near the present village of Douglas, Mich., where a bearing orchard of 300 trees was found by the settlers when they reached there, about 1834. In the mountain regions of southwestern Virginia, western North Carolina, and eastern Tennessee there are numerous seedling orchards of the type still in existence, and it is a significant fact that in recent years nurserymen throughout the Northern and Eastern States are turning to that region for sound and disease-free seed for planting.

Notwithstanding the early introduction and wide distribution of the type under such names as "Indian Peach," "Indian Cling," "Squaw Peach," etc., it has given rise to but few varieties that have been considered worthy of perpetuation by budding. The "Columbia," which Coxe originated in New Jersey from a seed taken from Georgia, was for many years after its description in 1817 apparently the only described variety. At the present time there are but few varieties, and most of these are restricted in their planting to the region in close proximity to the Gulf of Mexico, to which they appear to be better adapted than those of any other group. None of these has yet attained distinct commercial importance, but several are highly esteemed for home use. A marked characteristic of this group is that certain individual trees have a long blossoming period and a correspondingly long season in which the fruit matures. It is this that gives special value to the "Everbearing," a variety which originated about 1885 in the garden of a Mrs. Page, at Cuthbert, Ga. Blossoming, as it does, through a period of several weeks, it rarely fails to set a fair crop of fruit, while the fruit in turn ripens through a period of from six to twelve weeks on the same tree.

The variety was named and disseminated by the P. J. Berckmans Company, of Augusta, Ga., in 1897. It has been found insufficiently hardy in New Jersey, but is considered worthy of planting for home use throughout the recognized peach districts of the South. It is not recommended as a commercial peach, as the peculiar color and long ripening season would doubtless prevent it from becoming a profitable market sort.

DESCRIPTION.

Form roundish conical; size medium to large, the later ripening fruits being smaller than the earlier ones; cavity large, regular, deep, abrupt; stem rather stout; suture shallow; apex rather prominent; surface smooth, thickly covered with long, loose, velvety down; color greenish white, striped and mottled with purplish red; skin thick, tenacious; flesh whitish, considerably stained and veined with red, meaty, tender, and juicy; stone of medium size, oval, free; flavor subacid, rich; quality good to very good. Season, July 1 to September 1 or later in southern Georgia.

Tree vigorous, compact, productive; glands reniform; flowers large. The specimen illustrated on Plate LXI was grown at Augusta, Ga.

GOLDEN PLUM.

(SYNONYM: *Gold.*)

[PLATE LXII.]

Of the hybrid plums originated by Luther Burbank that have been introduced for a sufficient time to render a forecast of their climatic requirements possible, this variety appears adapted to the widest geographical range. The original tree was grown in 1887 or 1888, by Mr. Burbank, from a seed of Robinson (*Prunus angustifolia*), which was the result of a cross with pollen of Abundance (synonyms *Botan*, *Yellow-fleshed Botan*, *Sweet Botan* of Burbank, but not of others), one of the best known and most widely grown of the Japanese plums in America. It was named "Golden" by Mr. Burbank in 1892, and a brief description of the variety, based on specimens submitted by him, was published in the Report of the Pomologist of the Department of Agriculture for that year.^a It was catalogued and illustrated by Mr. Burbank under this name in his catalogue of New Creations in Fruits and Flowers, June, 1893. About that time the original tree and the right of introduction were purchased by the Stark Brothers Nurseries and Orchards Company, of Louisiana, Mo., which catalogued it for dissemination in the autumn of 1894 under the name "Gold," which was registered as a trade-mark in the United States Patent Office on February 26, 1895. The prior application and publication of the name "Golden" entitles it to precedence under the code of nomenclature of the American Pomological Society and it has, therefore, been generally adopted by pomologists.

The variety has been planted in most of our plum districts, and, while not of the highest dessert quality, is a hardy, productive, and excellent fruit in most of the territory where either the Japanese or the Chickasaw plums succeed.

^a Report of the Secretary of Agriculture, 1892, p. 263.

DESCRIPTION.

Form globular to globular oblate; size medium to large; cavity of medium size, deep and abrupt; stem of medium length, rather slender; suture shallow, except at apex, which is slightly depressed; surface golden yellow, lightly blushed with carmine when well ripened and covered with thin bloom; dots numerous, russet or gray; skin moderately thick, tenacious, rather acid, and when picked prematurely quite bitter; stone small to medium, oval, cling; flesh yellowish, translucent, with yellow veins, tender and juicy, yet firm enough to endure shipment well; flavor rich, subacid, pleasant; quality good to very good. Season medium, about July 20 to 30 at Augusta, Ga.; reported by Mr. Burbank to ripen through a period of five or six weeks during July and August in Sonoma County, Cal.

Tree dwarfish and compact, with small foliage, resembling its Chickasaw rather than its Japanese parent in these respects, a good bearer, and apparently hardy throughout all but the coldest plum districts. It is apparently particularly well adapted to the South Atlantic and Gulf States.

The specimens illustrated on Plate LXII were grown at Augusta, Ga.

DAMSON PLUMS.

[PLATE LXIII.]

In the effort on the part of commercial fruit growers and nurserymen to secure plums of large size and bright color that are suitable for dessert use in the fresh state as well as for cooking, the value of this important group of culinary plums has been largely overlooked in recent years. The production of damsons has lagged behind that of other plums, so that it may well be questioned whether the total product of this type now available in our markets is as large as it was twenty-five years ago. The market demand for the fruit continues strong in practically all city markets, so that the average wholesale price of damsons is considerably higher in most of them than that of the Domestica, native, or Japanese plums. This is especially true of the later ripening varieties, the fruit of which is available for domestic preserving after city families return from their country outings. As the damsons are adapted to a wide range of climatic conditions and are, as a rule, quite regularly productive, the present outlook appears to favor an increase in their commercial planting in the districts where they are known to succeed. This is especially true of varieties and districts that yield fruit which can be marketed after September 15 in the larger cities.

The varieties chiefly grown in this country are the "Common," "Cluster," "French," and "Shropshire," the last named being by

far the most extensively planted. Quite recently renewed interest in the damsons has brought to light several promising new sorts, of which the three following are considered worthy of illustration at this time:

RILEY.

This variety was discovered as a chance seedling about 1890 on the grounds of Mr. J. N. Riley, at Washington C. H., Ohio. It has an excellent record for productiveness and is reported to be especially resistant to the black-knot. Mr. Riley began its propagation in a small way about 1890 and disseminated it locally without a name shortly thereafter. It was named "Riley," in honor of the originator, in 1901 by Messrs. McNary & Gaines, of Xenia, Ohio, and was introduced by them in 1902.

DESCRIPTION.

Form globular; size medium; cavity small, shallow, abrupt; stem slender and of medium length; suture very shallow; apex minute; surface moderately smooth, glossy; color very dark brownish purple, covered with a profuse bluish-white bloom; dots small, russet, indented; skin thick, brittle, without trace of bitterness; flesh yellowish, translucent, with yellow veins, meaty and juicy; stone of medium size, roundish oval, semiadherent; flavor subacid, rich; quality good to very good for culinary use. Season, August 15 to September 1 at Washington C. H., Ohio.

The tree is reported to be a strong grower, both in nursery and in orchard, and very productive.

The specimen illustrated on Plate LXIII was grown at Washington C. H., Ohio.

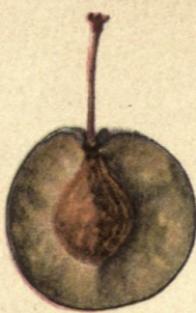
SCIOTO.

This variety has been grown at Chillicothe, Ohio, formerly a noted damson district, for nearly seventy-five years, generally under the name "Mussel," but sometimes as "Chickasaw," the name commonly applied to the native species *Prunus angustifolia*. It was brought to Chillicothe by Miss Palace Hill in 1831, in the form of young trees, from Petersburg, Va. These trees were from the nursery of her brother, Mr. Joseph C. Hill, who started a nursery on Halifax street, in that city, in 1820. The variety had been found by him on the farm of his brother, Mr. Thomas Hill, near Bollings Bridge, North Carolina, on the Roanoke River.^a It is a damson of superior quality and is highly esteemed in Ross County, Ohio. It is reputed to reproduce itself very closely through its seedlings, though commonly propagated by sprouts. So far as known, it has not been formally named and

^a Statements of William E. Hill, Chillicothe, Ohio, January, 1906, through letters of William B. Mills.



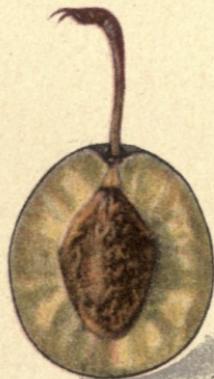
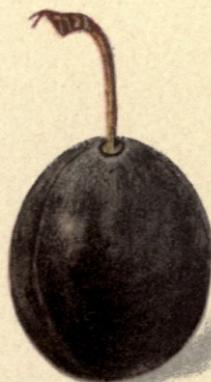
GOLDEN PLUM.



RILEY.



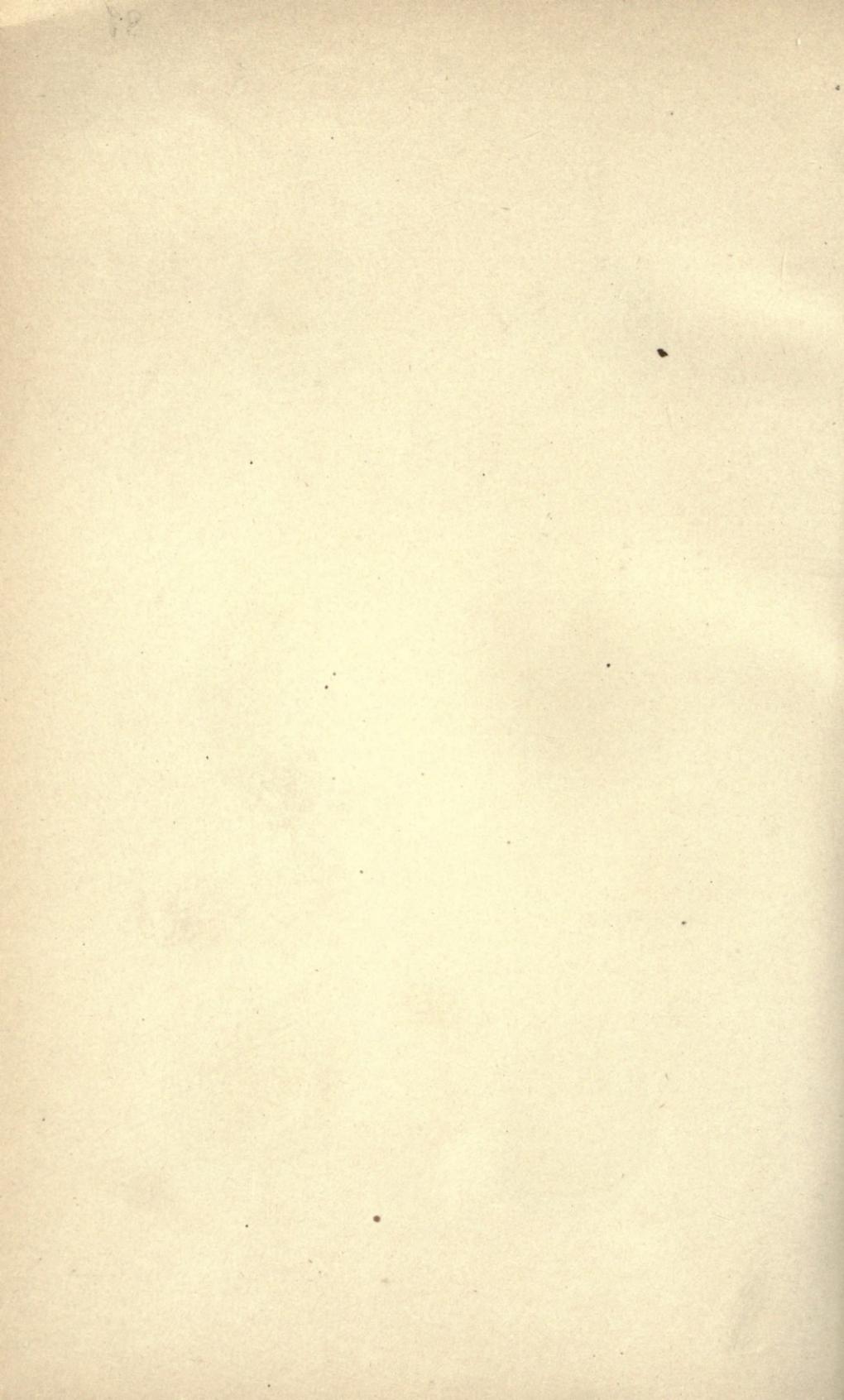
SCIOTO.



PRINGLE.

B. Beiges

DAMSON PLUMS.



introduced. It has been gratuitously disseminated in recent years under the name "Scioto" by Mr. William B. Mills, of Chillicothe, Ohio.

DESCRIPTION.

Form oblong to obovate; size medium to large for a damson; cavity small, shallow; stem medium in length, slender; suture very shallow; apex minute; surface smooth; color very dark purplish brown, almost black, covered with a profuse bluish bloom; dots minute, russet; skin moderately thick, tenacious, without bitterness; flesh yellowish green with whitish veins, meaty, firm, and moderately juicy; stone oval, free, small; flavor rich, subacid; quality good to very good, both in the fresh state and when cooked. Season, August 20 to 30 in Ross County, Ohio.

Tree a vigorous, upright grower, more spreading than most of the damsons, and very productive.

The specimen illustrated on Plate LXIII was grown at Chillicothe, Ohio.

PRINGLE.

This variety was discovered as a sprout from the stock of a Lombard plum tree in the orchard of Mr. A. C. Pringle, at Mears, Mich. The Lombard tree had been brought from a nursery at Geneva, N. Y., in 1863. After the sprout began bearing, the lateness of its fruit attracted attention, and the high prices received for it in the Chicago market led to its propagation and dissemination under the name "Pringle," by E. Hawley & Sons, of Hart, Mich., about 1896.

DESCRIPTION.

Form roundish oval; size large for this type; cavity regular, small, shallow; stem rather long, stout; suture shallow; apex slightly depressed; surface very smooth and glossy; color dark blue, covered with bright blue bloom; dots numerous, minute; skin moderately thick, tenacious, somewhat bitter; flesh translucent, greenish, with yellow veins, meaty and juicy; stone rather large, oval, adherent; flavor mild subacid; quality good for culinary use. Season late, October 1 to 15 in Oceana County, Mich.

Tree vigorous, upright, spreading, but rather slender, with very smooth wood and few spines. Unites well with myrobalan stock, but not at all with peach.

The specimen illustrated on Plate LXIII was grown at Hart, Mich.

EULALIA LOQUAT.

[PLATE LXIV.]

The loquat continues to attract interest in subtropical districts, especially in southern California, and several originators are now giving special attention to the development of improved varieties. One

of the most interesting yet introduced is the Eulalia, which was originated by Mr. M. Payan, of Olive, Cal., as one of several seedlings from seed of the "Advance"^a planted by him in 1897. The Advance tree from which the seed was secured stood beside a red-fruited seedling tree, which is supposed to be the staminate parent. When the seedling bore its first crop in 1893 the red color of its fruit, which extends through the flesh as a distinct pinkish tinge, attracted attention, and Mr. Payan at once began its propagation. He at first named it "Red Eulalia," but in May, 1904, reduced this to "Eulalia," in conformity with the code of nomenclature of the American Pomological Society. So far as known to the writer the variety has not been previously published or described. Its dissemination was begun by Mr. Payan in 1905.

DESCRIPTION.

Form truncate pyriform to obovate pyriform, borne in large, rather loose terminal clusters on stout woolly stems inserted without depression; surface smooth, sparsely covered with light down; apex depressed; basin irregular, abrupt, corrugated; calyx segments broad, short, downy, converging; eye medium, partially open; color orange yellow, blushed, and washed with red when tree-ripened and overspread with a thin bloom; dots numerous, aureole, light gray; skin thick, tough, acid; flesh pinkish, translucent, orange, melting, tender, very juicy; seeds of medium size, rather numerous; flavor subacid; quality good. Season, February to May in Orange County, Cal.

The tree is reported to be a rather vigorous grower, spreading and productive, and has thus far shown no blight.

The cluster illustrated on Plate LXIV was grown at Olive, Cal., and is rather below the usual size of the variety grown at that place.

PECANS.

[PLATE LXV.]

Interest in the pecan as an orchard nut continues to increase, and a large number of named varieties are now offered by southern nurserymen in the form of budded and grafted trees. Aside from the ten varieties described and illustrated in 1904^b but few of these have yet been fruited outside of the localities where they originated or on other than their original trees. Of the numerous new sorts that have come under the observation of the writer, the following are considered distinctly promising and worthy of test in their respective climatic regions.

^a For an illustration of the Advance loquat, see Yearbook of the Department of Agriculture for 1901, Pl. LII.

^b Promising New Fruits, Yearbook of the Department of Agriculture for 1904, pp. 405-416, Pls. LVI and LVII.

HOLLIS.

(SYNONYMS: *Hollis's Jumbo*; *Jumbo*; *Risien*, through error; *Post's Select*, in part; *Georgia Belle*.)

The original tree of this variety is a wild seedling which was discovered on the Colorado River bottom, on the farm of the late Thomas Hollis, near Bend, San Saba County, Tex., now owned by Mr. P. B. McCoury. It is reported to be from 75 to 100 years old, 100 feet high, and 3½ feet in diameter. It has averaged about 300 pounds of nuts per annum for several years, and yielded 540 pounds in 1905.^a This original tree has long had a high local reputation in the region of its origin, where it has been known as "Jumbo" and "Hollis's Jumbo." It appears to have been first propagated by Mr. E. E. Risien, of San Saba, Tex., about 1884, he having received scions of it from the late Dr. Gregg, of that place. Its general introduction under the name Hollis appears due to Mr. C. Falkner, of Waco, Tex., who began its nursery propagation about 1900. Since that time it has been considerably disseminated throughout central and eastern Texas by top-grafting and through nursery stock. Nuts from the original tree are reported to have been exhibited at the New Orleans Exposition in 1884-85 by Mr. F. H. Holloway, then of Burnet, but now of Fairland, Tex.^b Nuts from the same tree have been widely sold for seed since about 1899 under the name "Post's Select," which had previously been applied to the Post, an entirely distinct variety.^c Specimens of the Hollis, received from Mr. F. M. Ramsey, then of Bluffton, Tex., in 1891, under the name "Jumbo," were described and illustrated under that name in 1896,^d and other specimens received from Mr. E. E. Risien, San Saba, Tex., in November, 1890, without name, appear to have been erroneously described and illustrated under the name "Risien" in the same publication.^e

DESCRIPTION.

Size medium to large, averaging about 45 to 50 to the pound; form roundish oblong, with very blunt base and apex, very regular and symmetrical; color rather dull yellowish brown, with numerous purple splashes; shell thick, with partitions thick but soft, rendering the cracking quality good; kernel short, plump, rather dark in color, broadly grooved, releasing the shell easily, and of excellent form for confectioners' use; texture firm, but rather coarse; flavor sweet; quality good to very good.

^a Letters of P. B. McCoury, Bend, Tex., January, 1906.

^b Letter of Mrs. M. E. Hollis, Lometa, Tex., March, 1906.

^c See Yearbook of the Department of Agriculture for 1904, p. 411, Pl. LVII.

^d Nut Culture in the United States, Division of Pomology, Department of Agriculture, p. 63, Pl. IX, fig. 7.

^e Nut Culture in the United States, Division of Pomology, Department of Agriculture, p. 64, Pl. VIII, fig. 14.

The Hollis tree is a strong, rather upright grower, with stout, light-gray wood, showing large yellowish dots. The crop is said to run very uniform in size, and the nuts fill well. It is recommended for testing throughout eastern and central Texas and northward toward the limits of the range of the pecan.

The nuts illustrated on Plate LXV were grown at Bend, Tex., by the present owner of the original tree.

MONEYMAKER.

The original tree of the Moneymaker variety is one of a large number of seedlings in the orchard grown by Mr. S. H. James, Mound, La., from nuts planted by him about 1885. The nuts planted were purchased in New Orleans by Mr. James, and are supposed to have grown somewhere west of that city, between New Orleans and the Texas boundary. The seedlings from this lot of seed are quite distinct in habit of growth, color of bark, and foliage from the pecans of the Mississippi Valley, resembling more closely the characteristic Texas form of the species. The original Moneymaker tree began bearing at an early age, and has continued to increase its yield almost without interruption in a very satisfactory way. When examined by the writer in October, 1902, it was a beautiful, spreading tree, and had just yielded a crop of about 130 pounds of nuts. Mr. James began the propagation of the variety by budding and grafting in 1898, having catalogued it under the name "Moneymaker" about 1896.

DESCRIPTION.

Size medium, averaging 50 to 60 nuts per pound; form roundish oblong to roundish conical, rounded at base, usually with rather blunt apex; color bright brownish yellow with few purple splashes; shell rather thick, with thin partitions, cracking well; kernel roundish oblong, plump, bright, and rather broadly grooved, releasing the shell easily; texture moderately firm and compact, rather dry; flavor sweet; quality good to very good. The crop runs very uniform in size and the nuts fill well.

The tree is a strong, spreading grower, with large pale-green foliage, young wood pale green covered with light bloom, and with large dots. The hulls are nearly round and very bright in color, giving the fruiting tree an aspect quite like the Persian walnut (*Juglans regia*).

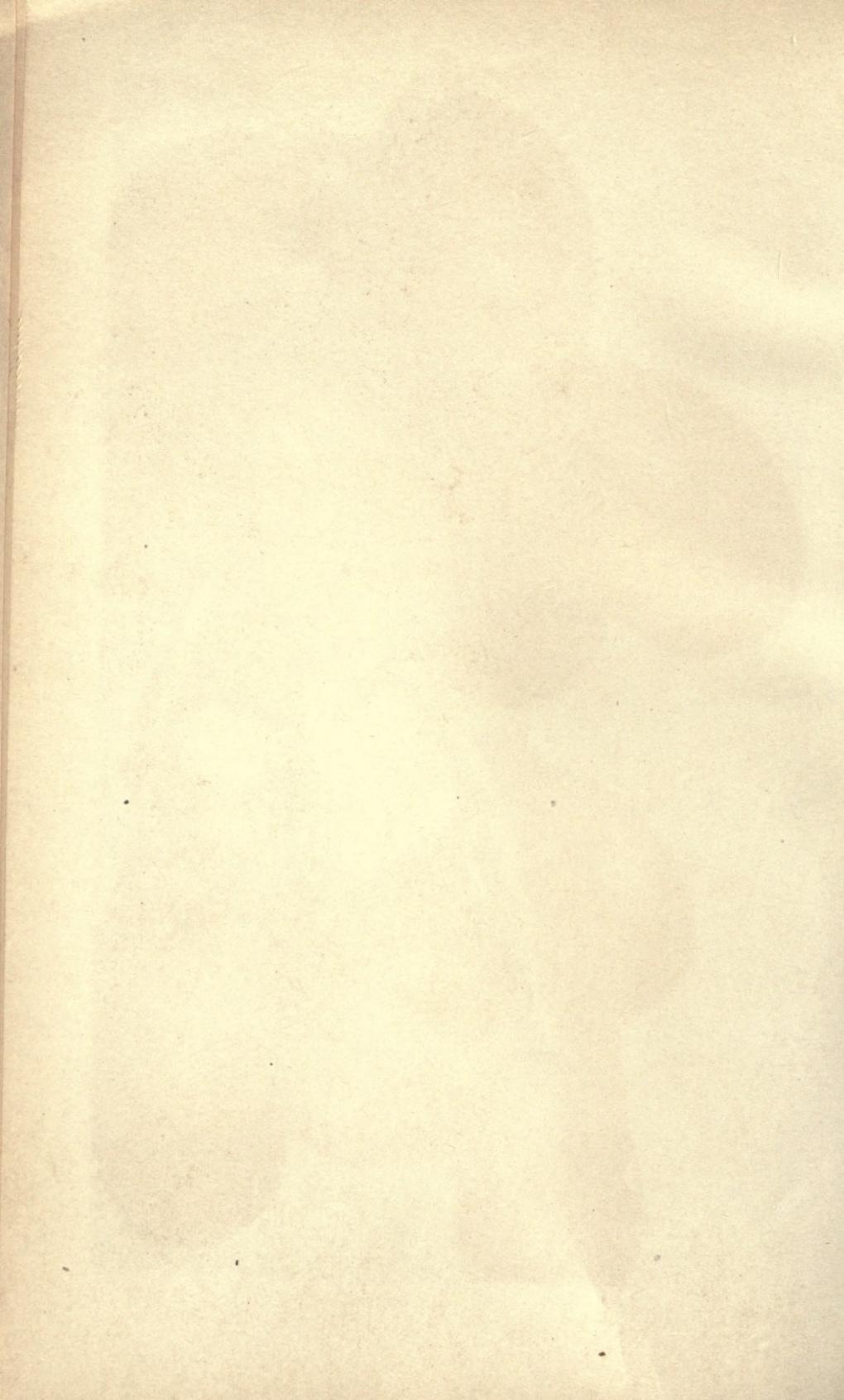
The thrift and productiveness of this variety in the latitude of Vicksburg, Miss., where it originated, render it promising for test in the more northern pecan districts, where hardiness is likely to be an important point.

The specimens illustrated on Plate LXV were grown at Mound, La.



D. G. Passmore

EULALIA LOQUAT.





MONEYMAKER.



HOLLIS.



SUCCESS.



SCHLEY.



YOUNG.

E. J. Schutt,

PECAN VARIETIES.

SCHLEY.

(SYNONYM: *Admiral Schley.*)

This variety is a seedling of the Stuart, grown from nuts from the original tree of that variety at Pascagoula, Miss., planted about 1881 by Mr. A. G. Delmas, Scranton, Miss., upon whose grounds the original tree of the Schley still stands. It is considered by the originator the best of a large number of seedlings grown by him. He named it "Schley" in 1898, and began its propagation by top-grafting in 1900. In 1902 Mr. D. L. Pierson, of Monticello, Fla., secured scions from the original tree and catalogued and introduced it as "Admiral Schley," under which name it has been quite widely disseminated.

DESCRIPTION.

Size medium to large, quite variable, ranging from 45 to 60 per pound; form quite variable, oblong conic to long obovate, with conical apex; color golden brown, with few purple splashes toward apex; shell very thin, partitions thin and brittle, cracking very easily; kernel long, slender, bright, rather deeply and narrowly grooved, but releasing the shell so easily that the entire kernel can readily be removed without mutilation; texture fine grained; flavor delicate, sweet, and rich; quality very good.

The thinness of shell, attractive color, and fine quality of this nut leave little to be desired in a dessert pecan, but the slenderness of the kernel is objectionable from the confectioner's standpoint. The crop is quite variable as to quantity, and the nuts vary considerably in size and form.

The tree is a rather slender grower, with bright brownish-green young wood, with numerous large, light dots. The original tree, now 25 years old, bore about 125 pounds of nuts in 1905. The variety should be tested in all districts near the Gulf of Mexico.

The nuts illustrated on Plate LXV were grown at Scranton, Miss.

SUCCESS.

The original tree of the Success pecan stands on the grounds of the late William B. Schmidt, at Ocean Springs, Miss., where it was grown from a nut supposed to have been planted by him about 1890. The attractiveness and superior quality of its crop were noticed by Mr. Theodore Bechtel in 1901, who began its propagation in the spring of 1902. The variety was named and introduced by Mr. Bechtel in 1903.

DESCRIPTION.

Size large, running about 45 to 50 nuts per pound; form oblong, with rather sharply conical base and blunt apex; color grayish brown, with rather heavy purple stripes, especially toward apex; shell of

medium thickness, with moderately thick partitions and fair cracking quality; kernel roundish oval, plump, bright, somewhat flaky in texture, but of pleasant flavor and very good quality.

Tree vigorous, rather upright, and regularly productive so far as observed. Promising for the Gulf region.

The original tree has been crowded by neighboring seedlings until recently, so that it is smaller than most pecan trees of its age in the same locality, but it yielded 45 pounds of nuts in 1905.

The specimen illustrated on Plate LXV was grown on the original tree at Ocean Springs, Miss.

YOUNG.

The original tree of the Young pecan is a planted tree, probably 60 or 70 years old, in the grounds of Mr. C. B. Delahoussaye in St. Martinsville, La. The parentage and early history of the tree are at present unknown. The large size and thinness of shell of the nuts borne by this tree attracted the attention of Mr. B. M. Young, of Morgan City, La., about 1891, who propagated it by top-grafting in 1895. It was named "Young" by Burnette^a in 1902, and was first catalogued for dissemination by J. F. Jones & Son, Monticello, Fla., in 1904.

The Young bears a striking resemblance in both tree and nut to the Russell, and, as it is much older, is possibly the parent of that variety.

DESCRIPTION.

Size medium to large, running about 50 to 60 nuts to the pound; form compressed, ovate conical, with pointed base and sharply conical apex; color rather dark grayish brown, with a few purplish splashes toward apex; shell very thin, cracking very easily; partitions thin and soft; kernel bright, oblong, symmetrical, releasing the shell easily, but not always plump at tip; texture fine; flavor delicate and rich; quality very good.

The tree is a vigorous grower, of rather pendulous habit, with slender brownish-green wood, conspicuously dotted. It has a good record for productiveness in recent years and is a promising fancy table nut for the Gulf region.

The specimen illustrated on Plate LXV was grown at Morgan City, La.

TRAPP AVOCADO.

[PLATE LXVI.]

The avocado (*Persea gratissima*), variously known in the Tropics as "avocado pear," "avocate," "aguacate," "alligator pear," "midshipman's butter," "palta," "vegetable marrow," etc., has in recent years

^aLouisiana Agricultural Experiment Station Bulletin 69, second series, p. 874.



D. G. Fairchild

TRAPP AVOCADO.

JULIUS BIER & CO. N.Y.

assumed distinct commercial importance in southern Florida. It occupies a rather unique position among tree fruits, inasmuch as it is chiefly used as a salad, so that it has been very properly designated by Collins^a "a salad fruit." The name "alligator pear," under which it is known to English-speaking people in Florida and the West Indies, and which is commonly applied to it in our markets, is a regrettable misnomer, as the species belongs to the laurel family, is subtropical in its climatic requirements, and has little in common with the pear. The forms commonly found in Florida are almost tropical, enduring little more frost than the mango, though a form introduced into the United States from Mexico by the Division of Pomology in 1893 is proving considerably hardier both in California and in Florida than the sorts usually grown.

While avocados have long been prized in the West Indies and Florida for home consumption, there does not appear to have been any considerable demand for them in northern markets until about 1887, when Mr. P. W. Reasoner notes^b that one firm in the New York market handled from 300 to 500 West Indian fruits per week during the season from June to November. Shipments from south Florida to northern markets began about as soon as express transportation was available, and many small plantings of seedlings are now found on the east coast, mostly below Palm Beach, and on the neighboring keys. The seedlings are exceedingly variable in productiveness and in the size, form, color, flavor, and time of ripening of the fruit, as noted by Rolfs,^c and not until its bud propagation was mastered was it possible for planters to perpetuate particular individual varieties.

The earliest commercial budding appears to have been done by Mr. George B. Cellon, Miami, Fla., in 1901, and since that time budded trees of several desirable varieties have been planted in considerable numbers in that region. From the commercial standpoint one of the most important features is lateness of ripening, so that the fresh-picked fruit can be marketed in the North from October to December. Of the varieties that are known to be of this character, the "Trapp" has been most widely propagated.

This variety appears to have originated as one of a lot of seedlings grown from seed planted about 1894 by the late Mr. S. C. Trapp in his garden at Cocoanut Grove, Fla. The fruit from which the seed was taken is supposed by Mrs. Trapp to have come from Key West. The original tree is now about 10 to 20 feet in height and is in healthy condition. Its late ripening habit and other desirable qualities having

^aBul. 77, Bureau of Plant Industry, Department of Agriculture, "The Avocado, a Salad Fruit from the Tropics," 1905.

^bBul. 1, Division of Pomology, Department of Agriculture, p. 40.

^cBul. 61, Bureau of Plant Industry, Department of Agriculture, "The Avocado in Florida," pp. 21-23, 1904.

attracted attention, its propagation by budding was begun in 1901 by Mr. Cellon, who introduced the variety under the name "Trapp" in the following year.

DESCRIPTION.

Form roundish oblate to oblate pyriform; size medium to large; cavity regular, small, shallow, with gradual slope, somewhat furrowed; stem stout; apex slightly depressed; surface smooth and undulating, with numerous brownish dots, some of which are indented; color pale green, with faint and indistinct pale-yellow stripes; skin very thick and tough, separating readily from the flesh; flesh fairly thick, firm, but smooth and rather oily in texture, ranging from pale green near the skin to greenish yellow next the seed cavity; flavor mild, pleasant; seed large, oblate, with loose seed coats, and loose in the cavity, sometimes germinating in the fruit when allowed to remain late on the tree, though, so far as observed, without injury to either texture or flavor of flesh; quality very good. Season, from October 1 to January in south Florida, occasional specimens having remained on the tree in good condition until March.

The tree is reported to be a fairly vigorous grower and very productive.

The striking commercial characteristic of the variety is its lateness of ripening, which renders it marketable for the midwinter holiday trade, when very high prices are realized. A large proportion of the budded trees thus far planted in Florida consists of this sort.

The specimen from which the illustration on Plate LXVI was made was from the original tree at Cocoanut Grove, Fla.



H. C. Chapman
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PROMISING NEW FRUITS.

By

WILLIAM A. TAYLOR,

Pomologist in Charge of Field Investigations, Bureau of Plant Industry.

[REPRINT FROM YEARBOOK OF DEPARTMENT OF AGRICULTURE FOR 1906.]

4793—07

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ЛІТНЯ ПІДСУДСЬКА КОЛЛЕКЦІЯ

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PROMISING NEW FRUITS.

By WILLIAM A. TAYLOR,

Pomologist in Charge of Field Investigations, Bureau of Plant Industry.

INTRODUCTION.

The question as to what varieties of fruits and nuts to plant is one that confronts the orchardist when he contemplates an increase of his orchard or vineyard. Requiring a more or less permanent investment of capital in the form of land and labor, as well as cost of nursery stock, it is essential that he choose such varieties as shall not only be adapted to his climatic and soil conditions, but also to the markets or uses for which their products are intended. The desires and needs of consumers change as time rolls on, so that sorts that were once profitable cease to be so, even though they do not deteriorate in any way; hence continual attention by the grower to the new sorts that come to notice is advisable. A few of the more promising new varieties for cultivation in different sections of the country are described and illustrated here in continuation of the series begun in the Yearbook for 1901 and contributed yearly since that time.

MAGNATE APPLE.

(*SYNONYMS:* *Magnet* of some; *Stayman's Superior*; *Stayman's No. 1* of some; *Stayman's No. 2* of some.)

[PLATE XXV.]

This promising early winter variety is a seedling of Winesap which originated with the late Dr. J. Stayman, at Leavenworth, Kans., in 1866.^a After the original tree came into bearing it appears to have been considerably disseminated by the originator, in the form of scions for testing, from about 1884 until his death, in 1903. While a number of descriptions and outlines of the variety made by Doctor Stayman are preserved in the extensive collection of such material bequeathed by him to the Department of Agriculture, it is apparently impossible at this time to determine under what designation the variety was first disseminated.

It appears to have reached Mr. J. W. Kerr,^b Denton, Md., in the winter of 1884-85 under the designation "Stayman's No. 1" with others of Doctor Stayman's seedlings in the form of scions from

^a MS. notes of Dr. J. Stayman in Pomological Collections, Bureau of Plant Industry.

^b Letters from J. W. Kerr, December, 1906.

J. Silvanus Gordon, of Sergeantsville, N. J. Mr. Gordon had received the scions from Doctor Stayman a short time before.^a About 1887 it reached the nursery of the Michigan Agricultural College,^b apparently direct from Doctor Stayman, under the same designation. In 1890^c Mr. Benjamin Buckman, of Farmingdale, Ill., received scions of it from the Michigan Agricultural College orchard labeled "Stayman's No. 1," and in 1893 under the designation "Stayman's Superior" he received scions direct from Doctor Stayman. Having fruited both and finding them identical, in 1901 he sent specimens of the fruit to Doctor Stayman for authentication of name, and received from him a strong expression of his conviction^d that the apple sent was in fact his "Stayman's No. 2." The original tree is reported by Mr. George H. Black, its present owner,^e to be living still, though it was almost destroyed by a severe windstorm in September, 1905. Messrs. Stayman and Black propagated a considerable number of trees of it for their own planting in the winter of 1897-98 at Leavenworth, Kans., where some seventy trees about 6 years old are now in bearing.

The earliest publication of the variety appears to have been by Prof. L. H. Bailey in 1887,^f when, as "Stayman's No. 1," it was included with several others of Doctor Stayman's seedlings in a list of varieties growing at the Michigan Agricultural College. In 1896 Mr. Benjamin Buckman published the names "Stayman's Superior" and "No. 1 Stayman's" in his "List of Fruit Varieties,"^g their identity not having been discovered at that time. The first commercial introduction of the variety appears to have been by Mr. J. W. Kerr, who catalogued it for the fall of 1898 and spring of 1899 as "Stayman No. 1."

It is evident from Doctor Stayman's notes and correspondence that at different times he had different names for the variety under consideration, such as "Red Sap," "Stayman's Superior," "Magnet," and "Magnate," and it appears strongly probable that scions were distributed by him for testing under all these names, as well as under the designations "No. 1" and "No. 2." His final choice appears to have been "Magnet,"^h but conflict of this with a previously published varietyⁱ of Wisconsin origin causes the present

^a Letter from J. Silvanus Gordon, December, 1906.

^b Letters from Prof. L. R. Taft and Prof. L. H. Bailey, December, 1906, and January, 1907.

^c Letters from Benjamin Buckman, December, 1906.

^d Letter of Dr. J. Stayman to Benjamin Buckman, October 3, 1901.

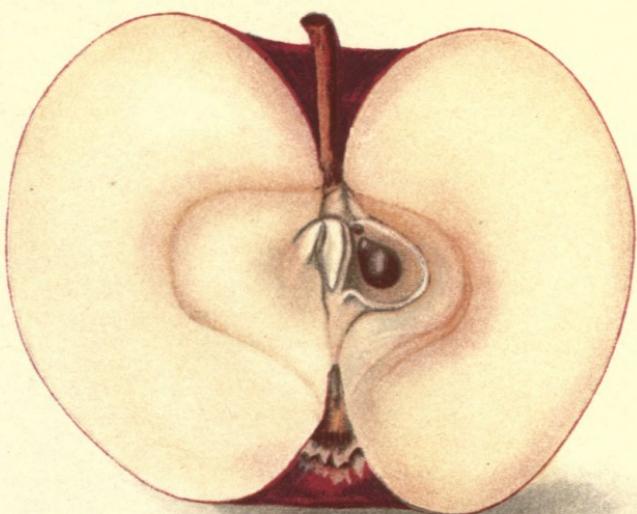
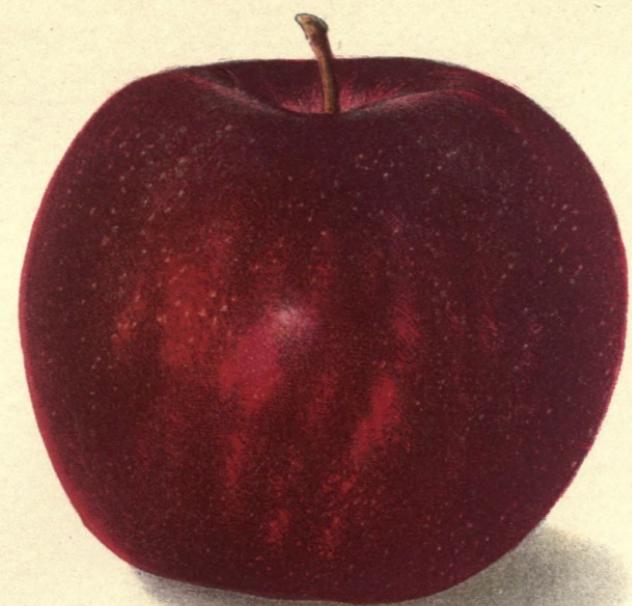
^e Letter of George H. Black, January 12, 1907.

^f Michigan Agricultural College Bulletin 31, 1887, p. 54.

^g List of Fruit Varieties in Private Experimental Orchard of Benj. Buckman, Farmingdale, Ill., fall 1896, pp. 4-5.

^h Letter of Dr. J. Stayman to Benj. Buckman, December 17, 1900.

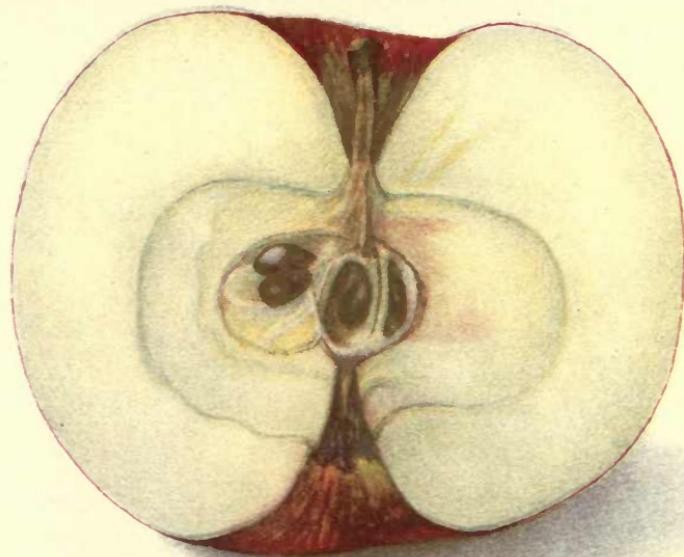
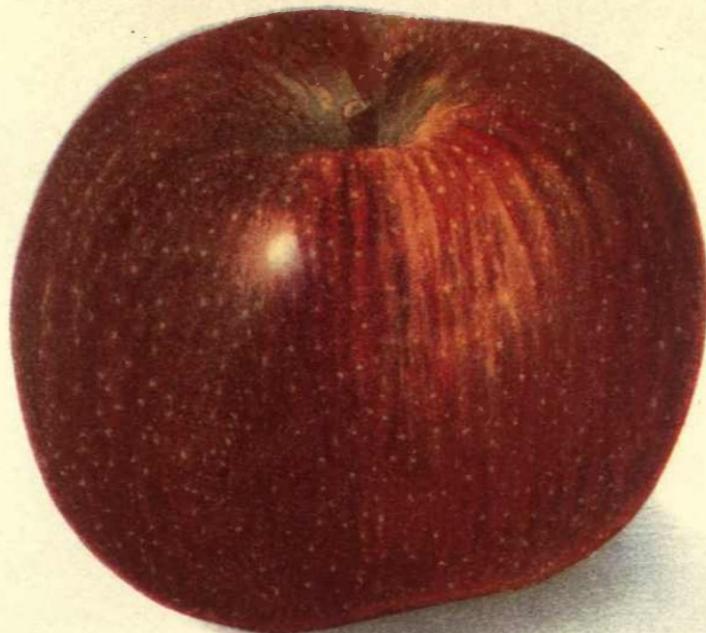
ⁱ Minnesota Agricultural Experiment Station Report, 1890, p. 36.



D. G. Passmore

MAGNATE APPLE.

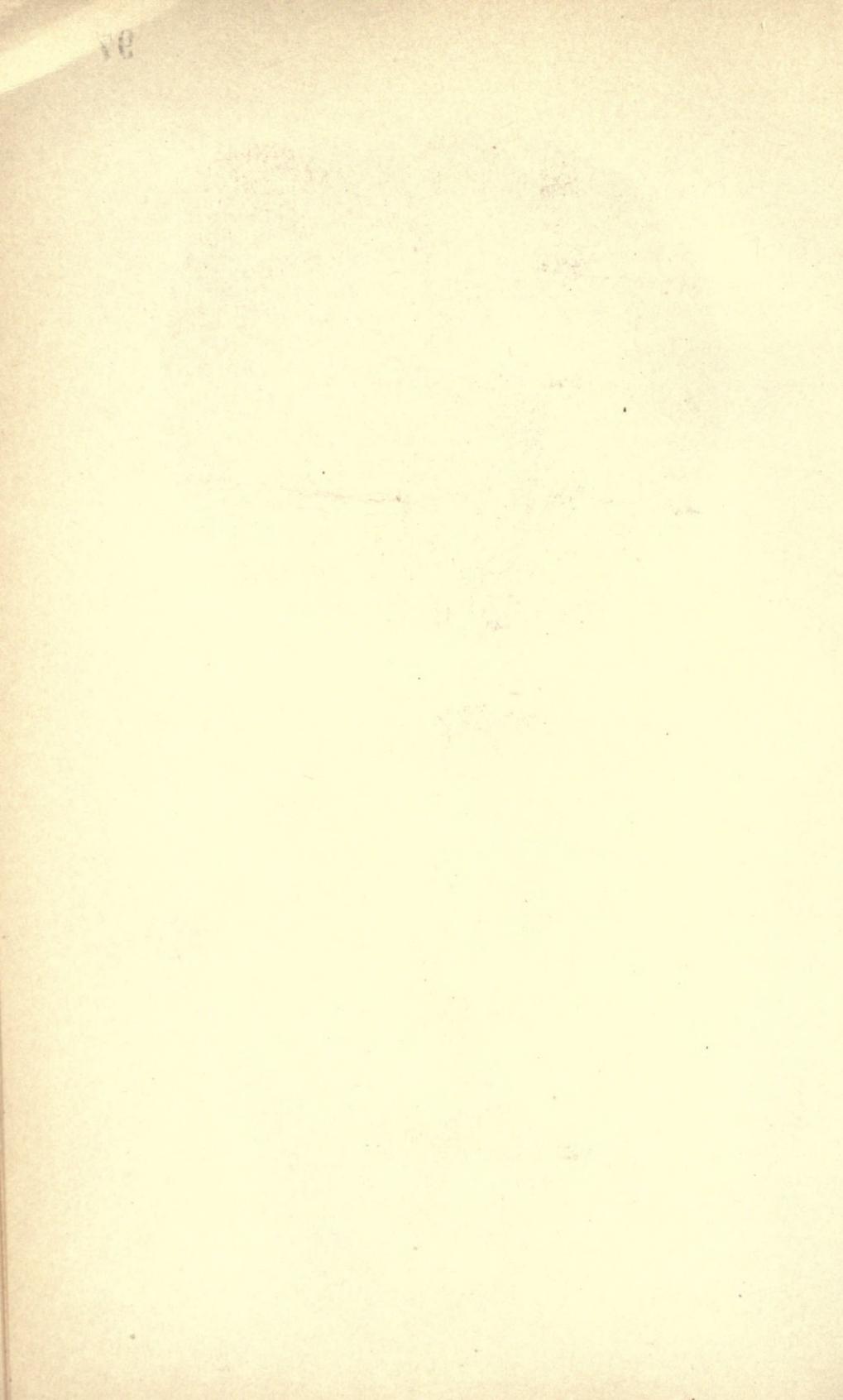
A. HOEN & CO., BALTIMORE



A. A. Newton

RABUN APPLE.

A. HOEN & CO. BALTIMORE.



PROMISING NEW FRUITS.

RABUN APPLE.

(SYNONYMS: *Rabun Bald*; *Rabun Ball*,^a through typographical error.)

[PLATE XXVII.]

One of the most promising new apples for the lower Appalachian region, comprising western North Carolina, eastern Tennessee, and northern Georgia, is the Rabun. Its history as furnished by Prof. C. C. Newman,^b of Clemson College, S. C., is substantially as follows:

The original tree was found about 1890 by Mr. Andy Hanby in clearing land on his place on the Walhalla and Franklin wagon road, about 13 miles northeast of Clayton, Ga., where it still stands. It was small when found, and is thought by Mr. Hanby to have been about 5 years old at that time. About 1900 Mr. Hanby dug up eight young sprouts about the parent tree and planted them elsewhere, all of which are now in bearing and are identical with the parent tree. Fruit from the original tree was exhibited at the Georgia State Fair in 1904 and 1905 under the name "Rabun Bald," which was suggested by the location of the tree, which is on a spur of Bald Mountain. It has since been locally known under this name, which is here reduced to Rabun to conform to the code of nomenclature of the American Pomological Society. It was first described and illustrated by Prof. C. C. Newman^c in 1905 in Bulletin 9 of the South Carolina Agricultural Experiment Station. Some 2,500 trees of this variety have been planted at Clayton, Ga., but aside from this it does not appear to have been commercially disseminated.

DESCRIPTION.

Form oblate, slightly ribbed; size large; surface smooth; color yellow, washed with mixed red, splashed and striped with bright crimson; dots numerous, small, russet; cavity large, regular, deep, russeted; stem short, stout; basin regular, large, deep, of gradual slope, furrowed; eye medium to large, closed; calyx segments medium, converging, reflexed at tip, tube long, flaring; skin moderately thick, tenacious; flesh yellowish, fine-grained, breaking, juicy; core large, oblate, open, clasping; seeds medium, plump, brown, very numerous; flavor subacid; quality good to very good. Season, November to March in northern Georgia.

The tree is described as a stocky, vigorous grower, of spreading habit, requiring severe pruning when young. The bearing habit is distinctive in that the fruit is largely borne on spurs along the older branches, the crop being thus quite evenly distributed throughout the

^a South Carolina Agricultural Experiment Station Bulletin 9, May, 1905, p. 24.^b Letters of C. C. Newman, January, 1907.^c South Carolina Agricultural Experiment Station Bulletin 9, p. 24.

tree. The original tree is a heavy cropper in alternate years, bearing about a half crop in the "off year." It yielded 15 bushels in 1905.

The specimen illustrated on Plate XXVII was grown in 1905 by Prof. C. C. Newman, at Clayton, Rabun County, Ga.

EARLY WHEELER PEACH.

(SYNONYMS: *Wheeler Cling; Early Wheeler Cling.*)

[PLATE XXVIII.]

The lengthening of the peach season through the origination of both earlier and later varieties of good quality is a matter of much importance to peach growers, especially in the Southern States. At the present time so large a proportion of the trees in southern orchards consists of the one variety, Elberta, that almost the entire peach crop of each important locality must be harvested and marketed within a period of ten days or two weeks. This causes serious labor shortage at the critical times, overburdens transportation facilities, and tends to produce that most expensive menace to profitable peach growing, a glutted market. If the weather conditions chance to be unfavorable during this short harvest period, the evils are accentuated and most of the returns for the year's work are not infrequently lost through the shortness of the marketing season. Peach growers and nurserymen have long recognized the need of earlier market varieties, and a large number of early sorts have been brought into notice from time to time. Among these the Greensboro, Carman, Waddell, Mamie Ross, and Hiley varieties have attained a more or less stable foothold in different sections as commercial sorts.

Most of the varieties earlier than these, however, unless grown under very favorable conditions, are of inferior flavor and deficient carrying quality. The Early Wheeler, which was one of a large number of seedlings of Heath Cling grown by Mr. E. W. Kirkpatrick, of McKinney, Tex., and first fruited in 1900, appears to be an exception in these respects, being as early as Alexander, as large as Mamie Ross, and of as excellent dessert and shipping quality as Oldmixon Cling. It was experimentally disseminated by Mr. Kirkpatrick immediately after it first fruited, being sent out as Early Wheeler Cling. About 1903 this was reduced to Early Wheeler, and on April 17, 1906, an arbitrary device bearing this name and a portrait of the originator was registered in the United States Patent Office as a trade-mark by the Texas Nursery Company, of Sherman, Tex., which introduced it commercially in that year.

DESCRIPTION.

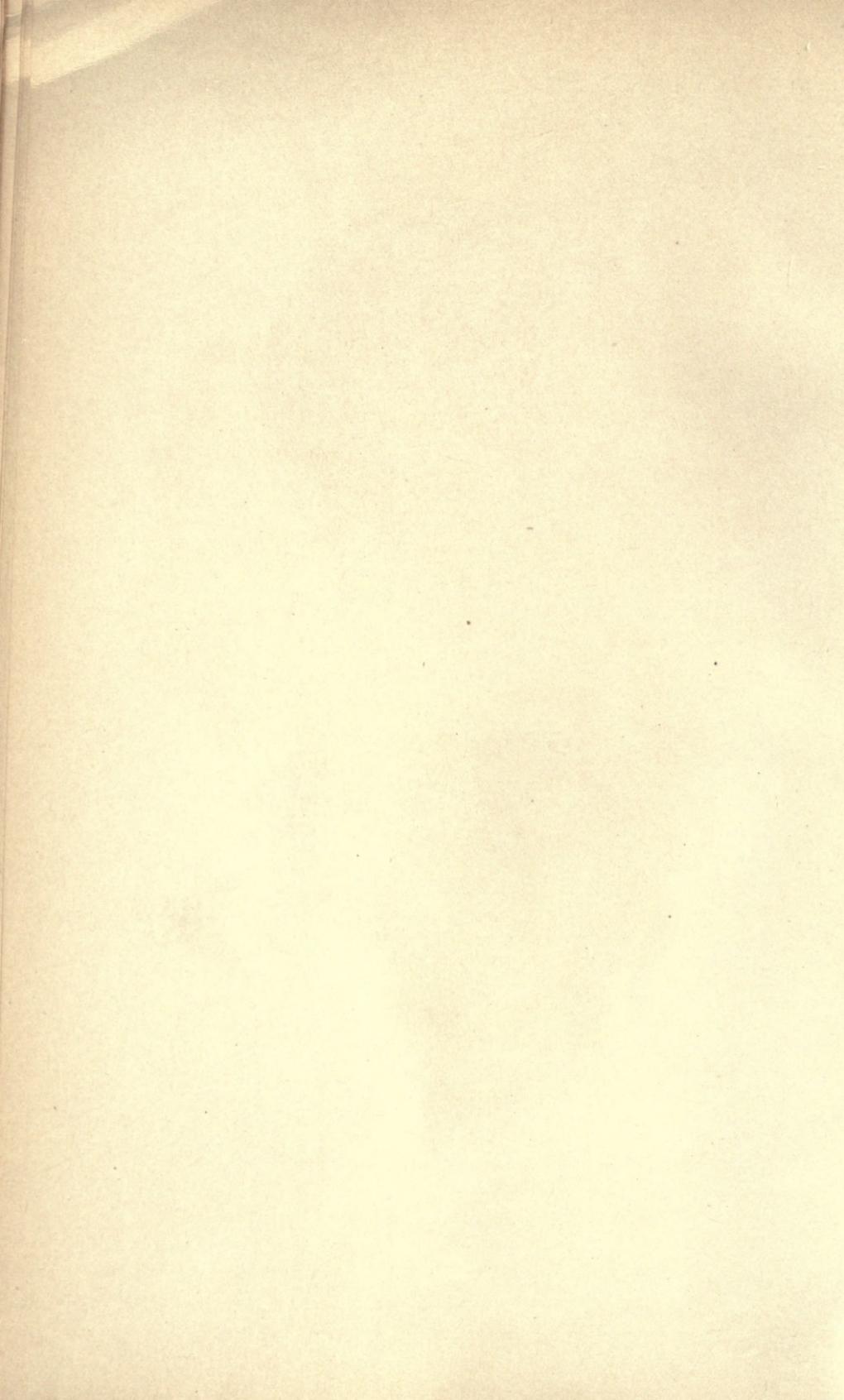
Form roundish oblong to oblong conical; size medium to large; cavity regular, large, broad, of medium depth and slope, marked with red; stem short, moderately stout; suture shallow except near



D. G. Passmore

A. HOEN & CO BALTIMORE

EARLY WHEELER PEACH.





I. G. Passmore

A. HOEN & CO BALTIMORE

BANNER GRAPE.

cavity, from which it extends to the protruding apex; surface smooth, covered with loose, soft, velvety down; color creamy white, marbled, splashed and dotted with crimson; skin moderately thick, tenacious; flesh whitish, distinctly stained with red near the skin, firm and meaty, but juicy; stone oval, of medium size, adherent; flavor subacid; quality good to very good. Season, very early, May 15 to June 1, practically with Alexander in northeastern Texas. Leaf glands reniform; blossoms very large and red.

The variety has already been considerably planted in commercial orchards in eastern Texas, and while less precocious than some sorts, is considered sufficiently productive for a commercial variety.

The specimen illustrated on Plate XXVIII was grown by E. W. Kirkpatrick, at McKinney, Tex.

BANNER GRAPE.

[PLATE XXIX.]

This very promising variety for the Southwest is said by its originator, Mr. Joseph Bachman, Altus, Ark.,^a to have been grown in 1898 from seed of Lindley crossed with Delaware. It would appear from the vigor and productiveness of the vine and the large size of the cluster, however, that some other variety, probably one of his other seedlings that stood near by, was concerned in the cross, and the originator appears to incline to this opinion, as he states that the Lindley blossoms were not protected from other pollen at the time of pollination with Delaware.

The original vine bore a crop of twelve clusters in its third year, 1901. Two of these were exhibited by the originator at the Pan-American Exposition in that year under the name Banner, which the late Judge Samuel Miller published for the variety in a communication in Colman's Rural World for September 18, 1901. The variety was first propagated in 1902, and was experimentally disseminated in the spring of 1906. So far as known, it has not yet been fruited elsewhere than on the grounds of the originator. It was commercially introduced in 1906 by the Stark Brothers Nurseries and Orchards Company under the name Banner, which when printed in a certain arbitrary typographical form was registered by them as a trade-mark in the United States Patent Office, May 1, 1906.

DESCRIPTION.

Cluster large, broad conical, heavily shouldered, very compact; stem short; berries globular, of medium size, adhering tenaciously to the small green peduncles; skin moderately thick, and rather tough; amber red and glossy, but covered with a profuse bloom; flesh

^a Letters of Joseph Bachman, August and September, 1906, and January, 1907.

translucent, juicy, and rather meaty; seeds few, very small, brown; flavor refreshing subacid to sweet and aromatic; quality good to very good. Season, late August and early September in Franklin County, Ark., ten days or two weeks later than Delaware.

The vine is reported by the originator to be very vigorous and productive.

The cluster illustrated on Plate XXIX was grown by Mr. Joseph Bachman, at Altus, Franklin County, Ark.

JOSEPHINE PERSIMMON.

(SYNONYMS: *American Honey*; *Honey*.)

[PLATE XXX.]

Of the varieties of this valuable native fruit that have thus far been brought to the attention of the Department of Agriculture, the best in dessert quality is the one here described. It was received first from T. V. Munson & Son, of Denison, Tex., who have catalogued^a it since 1896 as "*American Honey*," their dissemination consisting chiefly of seedlings grown from a top-grafted tree standing upon their grounds. Attention to the apparent identity of American Honey and Josephine, a variety gratuitously disseminated by the late Judge Samuel Miller, of Bluffton, Mo., having been called by Mr. Benjamin Buckman,^b of Farmingdale, Ill., recent investigation has revealed the following interesting facts:

About 1882 or 1883 the late Judge Miller discovered a wild persimmon tree bearing fruit of superior quality on the farm of Mr. Dennis Watson, about a mile east of Bluffton, Mo.^c The tree was then about 3 inches in diameter, and stood close to the bank of the Missouri River, where it was in danger of being undermined by that unruly stream. Though a large tree of this species to transplant, in 1883 Judge Miller, with the help of his sons, dug it up and transported it in a small boat to his home garden at Bluffton. The transplanted tree never thrived in its new location, but the variety was preserved by grafting, and was gratuitously disseminated by him among his friends and correspondents in many parts of the country. Later he named it Josephine, in honor of a daughter of Mr. Watson, on whose farm the original tree was found. This name Mr. Miller published in 1894.^d Meanwhile, Prof. T. V. Munson had received from Judge Miller, about 1883 or 1884,^e three lots of native persimmon scions, designated as follows: "Flat fruited," "round fruited," and

^a Letter of T. V. Munson, November, 1906.

^b Benjamin Buckman in *Rural New Yorker*, February 20, 1904, p. 130.

^c Letter of Samuel E. Miller, December, 1906.

^d *Colman's Rural World*, February 15, 1894, p. 51.

^e Letters of T. V. Munson, November, 1906.

"oblong fruited." These he grafted on native roots, getting one tree of each to grow. Of these, the ones labeled "flat fruited" and "round fruited" bore fruit, the one labeled "oblong fruited" proving to be staminate flowered, and therefore sterile. The flat one was found to be of better quality than the other, and after fruiting both for several years, Professor Munson, unaware that Judge Miller had meanwhile disseminated and named it Josephine, christened it "American Honey" and offered it in his catalogue for 1896, as previously mentioned.

The name Josephine having previously been applied and published by the introducer and used on scions for grafting entitles it to acceptance by pomologists, and it is so accepted by Professor Munson since the facts have become known.

The case well illustrates how easily varietal names of fruits may become confused during their preliminary testing periods. Nothing less than the utmost exactness and care by disseminators and propagators will suffice to prevent confusion and duplication of names in such cases.

DESCRIPTION.

Form oblate to roundish oblate, or quadrangular; size medium to large; surface smooth, except shallow radiating grooves near the calyx and the four sutures; color pale, translucent, yellowish, covered with a profuse whitish bloom; cavity large, broad, of medium depth, furrowed; stem short, moderately stout; calyx four parted, of medium size, pale green; apex a slender point in a slight depression; skin thin, tender; flesh yellowish, translucent, with yellow veins; seeds rather numerous, rather large, short, broad, plump, brown; flavor sweet, rich, and aromatic; quality very good. Season, early, following Early Golden.

The tree is reported to bear regular crops, and the earliness and fine quality of the fruit render the variety worthy of test by all persimmon growers.

The specimens illustrated on Plate XXX were grown by T. V. Munson & Son, at Denison, Tex., in 1906.

CHAPPELOW AVOCADO.

[PLATE XXXI.]

Interest in the avocado as a salad fruit continues to increase. The market demand is so strong in eastern cities during late autumn and winter that south Florida growers are enlarging their plantings of the later ripening sorts of the West Indian type, such as the Trapp,^a in the expectation that their culture will prove highly profitable. In southern California quite a different condition prevails, the smaller and more hardy Mexican type being apparently better adapted to

^a Described and illustrated in Yearbook for 1905, p. 508, Plate LXVI.

conditions in the localities where avocado culture has thus far been attempted. While no commercial plantings as large as those in south Florida have yet been made in California, certain individual trees in particular localities have proved productive and profitable, and, as the local demand at all times of the year is thus far in excess of the supply, regularity of bearing and acceptable quality of fruit in that State outweigh all other varietal characteristics.

So far as known the only variety thus far perpetuated by bud propagation in California is the Chappelow. The original tree of this variety was grown by Mr. William Chappelow, Monrovia, Cal., from seeds sent him by the Division of Pomology of the Department of Agriculture in July, 1893. The seeds had been received shortly before that time from Mr. F. Foex, then of Eddy, N. Mex., who had obtained them from fruits found by him on trees near Monterey, Mexico, where they had been subjected to a temperature of about 22° F. during several consecutive nights when in blossom during the preceding winter. As the other avocado trees of the vicinity had been killed or badly damaged by the low temperature, while these had survived and matured half a crop of fruit, it was presumed that these were especially resistant to cold, as has since been proved true in the case of seedlings descended from them.

Mr. Chappelow grew but a single tree from the four seeds sent him. This was grown in a pot at first, being transplanted to the open ground when about a foot high. The first winter, when about 4 feet high, it was cut down to the ground by a temperature of about 24° F., but soon recovered and developed into a fine, vigorous tree. It began bearing in 1898, and has rarely failed to produce at least a partial crop since that time. Scions from this tree were sent Prof. P. H. Rolfs, of the Subtropical Laboratory, at Miami, Fla., in 1902, and fruits grown on a tree top-worked therefrom were illustrated by him in 1904.^a The variety was named Chappelow by Professor Rolfs^b and has since been sparingly disseminated under that name. Mr. Chappelow has not kept a continuous record of the product of the tree, but states that in 1905 it bore more than 1,200 fruits. The net return to him from this tree in recent years, in addition to fruits retained for home use, has been as follows:^c 1903, \$32; 1904, \$54; 1905, \$130; 1906, \$65. The tree blossoms at Monrovia in November and December, and ripens its crop from July 15 until September, sometimes continuing into early October.

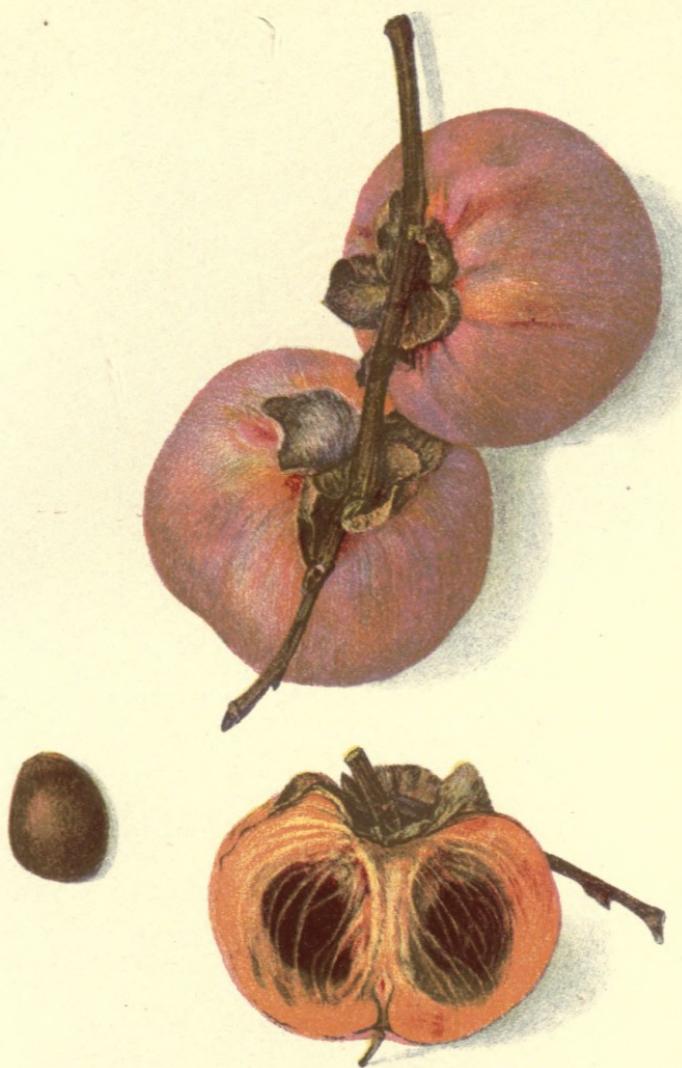
DESCRIPTION.

Form oblong, slender, pyriform or "bottle necked;" size medium to large for the Mexican type; cavity small, shallow, and wrinkled;

^a B. P. I. Bulletin 61. The Avocado in Florida, July 7, 1904, fig. 9 B, p. 26.

^b B. P. I. Bulletin 97. S. P. I. Inventory No. 12934.

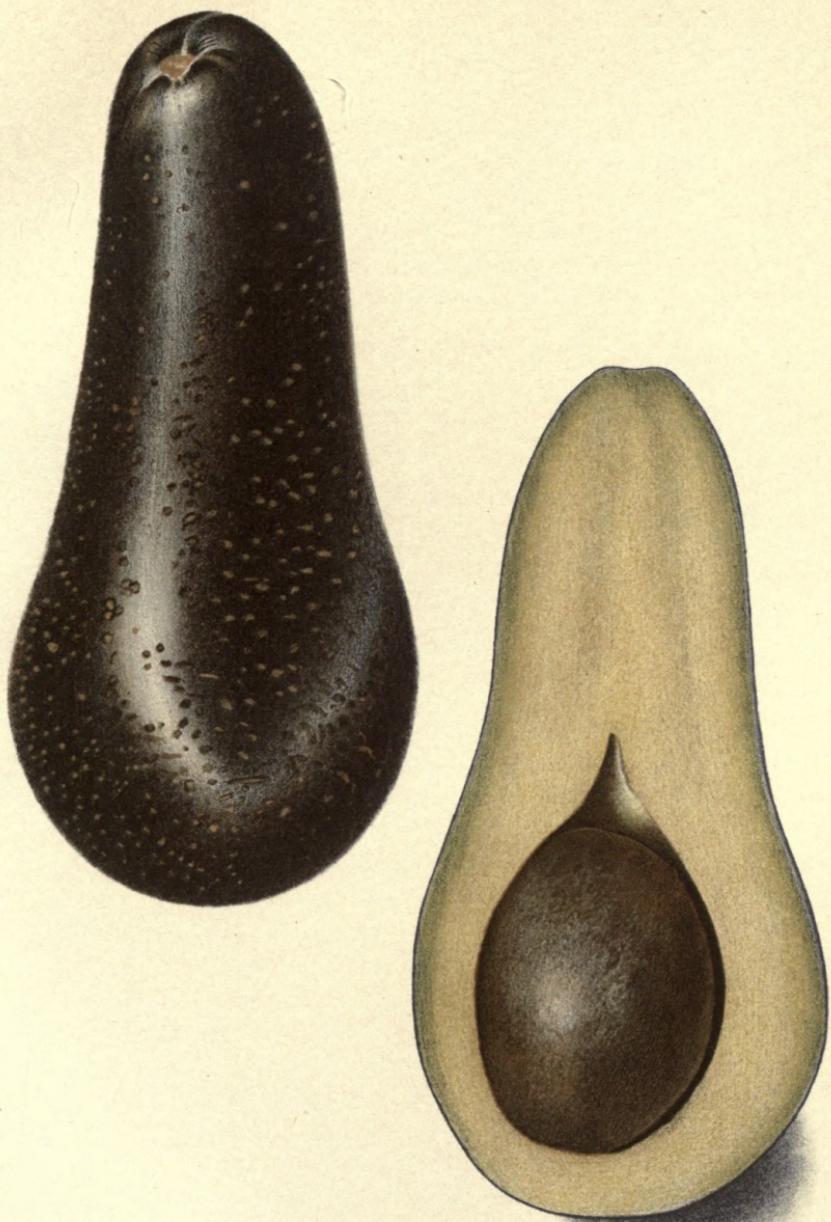
^c Letters from William Chappelow, August and October, 1906.



A. A. Newton

JOSEPHINE PERSIMMON.

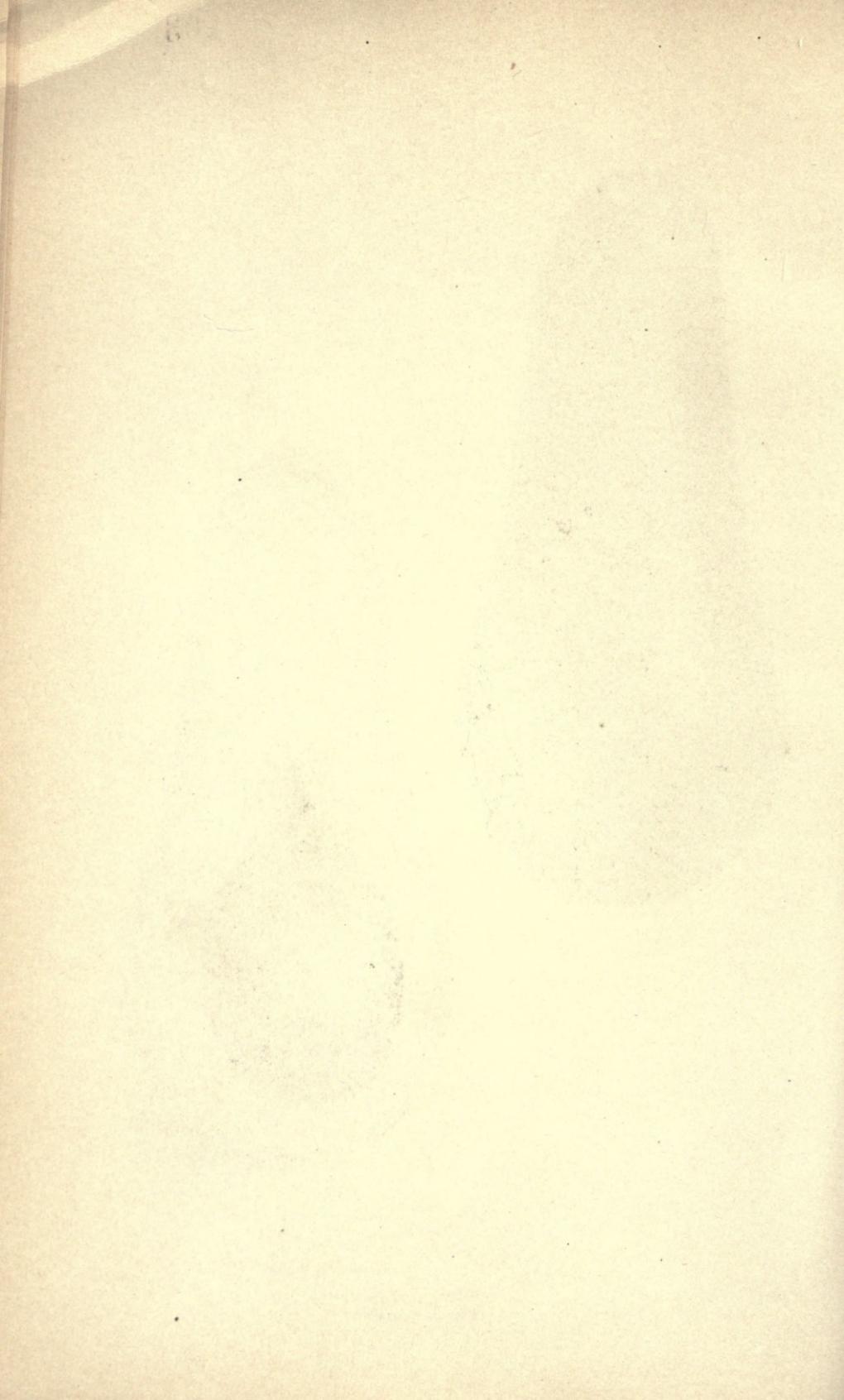
A. ROSEN & CO. BALTIMORE.



D. G. Passmore

CHAPPELOW AVOCADO.

A. HOEN & CO. BALTIMORE.



stem stout; surface undulating, smooth, glossy; color dull purple, with reddish-brown dots; apex a mere dot; skin very thin, tender, adhering closely; flesh pale greenish-yellow, buttery; seed large in proportion to size of fruit, roundish conical, filling internal cavity; flavor pleasant, though less rich than the best varieties of the West Indian type. Season, July to October at Monrovia, Cal.

The tree is a vigorous, rather diffuse grower, with slender wood. It is productive, although being an early bloomer it is sometimes caught by frost. It is considered worthy of testing in the thermal belts of southern California, and for domestic use along the northern edge of the avocado districts of Florida, where its superior hardiness is likely to outweigh the disadvantages of relatively small size and early time of ripening.

The specimen illustrated on Plate XXXI was grown on the original tree on the grounds of Mr. William Chappelow, Monrovia, Cal.

PECANS.

[PLATE XXXII.]

The pecan continues to engage the attention of nut growers in the South Atlantic and Gulf States almost to the exclusion of other nut-bearing trees. The increasing popularity of the nut, doubtless due in part to the development of systematic methods of grading and cracking by machinery operated by steam or electric power, which render possible the marketing of the meats ready for use, have combined to produce a market demand considerably in excess of the present supply. Under this stimulus and the production of considerable numbers of budded and grafted trees of choice varieties in southern nurseries the planting of pecan orchards is proceeding rapidly in many portions of the South. Much of this planting up to the present time has of necessity been done rather blindly as regards the adaptability of varieties to soil and climatic conditions, very few varieties having yet been fruited sufficiently outside of the localities of their origin to determine their probable behavior elsewhere. As the earlier plantings of budded and grafted trees come into bearing, it is unfortunately becoming apparent that in the infancy of the industry the stock of several of the leading varieties was considerably mixed with other sorts. In some cases closely related seedlings inferior to the sort whose name they bore appear to have been propagated from. This confusion of identity is now giving rise to diverse reports as to the behavior of particular varieties in different sections, and will doubtless require some years of careful work by nurserymen and orchardists to rectify.

Seedling orchards grown from nuts of the large varieties, such as Centennial, Frotscher, Stuart, Van Deman, Russell, etc., that came into public notice from 1875 to 1895, are now coming into bearing

throughout the South, and as both the trees and nuts commonly bear a general resemblance to their parents, they are in many instances being discussed and even labeled with the names of the parent varieties. As such seedlings are likely to disclose characteristics even more diverse from their parents if budded or grafted from and planted elsewhere, they should never be designated otherwise than as seedlings until found worthy of distinctive varietal names.

The utmost care in selection of authentic stock of these earlier varieties to bud and graft from is necessary at the present time to insure trueness to name in the nurseries and orchards. It is not safe to use grafting or budding wood of any of these sorts from trees that have not borne, except where such stock can be unquestionably traced to bearing trees that are true to name.

Less confusion exists among the more recent introductions, although some of these have in various ways been more or less confused with one another. A few of the more promising of the newer ones are described and illustrated.

ALLEY PECAN.

The original tree of this variety was grown by Mrs. C. H. Alley,^a of Scranton, Miss., from a pecan of unknown variety presented to her by the late Col. R. Seal, of Mississippi City, Miss., in 1871. This nut she planted in a box the same fall, transplanting the young seedling that resulted therefrom to its present location in her garden in 1872. The tree began bearing at the age of about nine years and has the reputation of being a steady and prolific bearer. The variety was first propagated by Mr. F. H. Lewis, of Scranton, who set buds and grafts of it in 1896, and since that time it has been considerably disseminated by him and others under the name Alley. The original tree bore about 200 pounds of nuts in 1905, and had a fair crop when the storm of September, 1906, occurred. This destroyed a considerable portion of the crop and broke several large branches from the tree, though not enough to permanently injure it.

DESCRIPTION.

Size medium, averaging 60 to 80 nuts per pound; form, oblong to ovate conical, with moderately sharp quadrangular apex; color, bright yellowish brown, with rather long and conspicuous black markings; shell brittle, thin; partitions very thin; cracking quality excellent; kernel plump and well filled out, though deeply grooved and considerably undulated and irregularly indented; kernel bright, brownish straw color; texture firm and fine grained; flavor sweet, delicate, and free from astringence; quality very good.

The specimens illustrated on Plate XXXII were grown on the original tree in the garden of Mrs. C. H. Alley, at Scranton, Miss.

^a Letter from Mrs. C. H. Alley, November, 1906.

The tree is a moderately strong, though rather slender, grower and is reported to be productive in several localities where it has been top-worked during the past five or six years.

TECHEA PECAN.

(SYNONYMS: "Frotscher No. 2;" "Duplicate Frotscher;" "Fake Frotscher;" "Spurious Frotscher.")

Among the budded trees of the Frotscher pecan when first disseminated by Mr. William Nelson and the late Mr. Richard Frotscher, of New Orleans, about 1885,^b it has recently been discovered that there were trees of at least one other variety quite closely resembling it in wood and habit of growth, but yielding a smaller and more conical nut. This sort, which reached a number of growers, including Mr. J. B. Wight,^c of Cairo, Ga., and Dr. J. B. Curtis, of Orange Heights, Fla., in this way, has proved to be of sufficient merit to entitle it to a distinctive name. The place of its origin is not known, but since it appears to trace to the first lot of Frotscher scions received by Mr. Nelson ^d from Mr. Frotscher for propagation, all of which were supposed to have come from the original Frotscher tree near Olivier, La., on the Bayou Teche, it is probable that the parent tree of this one was somewhere in that vicinity. Acting on this supposition, the committee on nomenclature and standards of the National Nut Growers' Association, at its annual meeting at Scranton, Miss., in November, 1906, named the variety "Teche" to distinguish it from the true Frotscher. As there appears to be good reason to suppose that several other varieties closely resembling Frotscher have been and still are mixed with that variety in many orchards and nurseries, the name Teche should not be indiscriminately applied to all the "spurious" Frotschers, but should be restricted in its application to the one which is here described from specimens grown by Mr. Wight on trees obtained from the Nelson nursery in 1895.

DESCRIPTION.

Size medium to large, averaging 55 to 65 nuts per pound; form long oval, compressed, tapering gradually, with the smaller specimens slightly curved near apex; color bright, light, with few broken black stripes; shell comparatively thin, but thicker than Frotscher, with which it was disseminated through error; partitions thin and soft; cracking quality excellent; kernel bright and free from the objectionable brownish veining of the Frotscher, plump and uniformly well

^a Pronounced Tesh.

^b Yearbook, 1904, p. 408.

^c Letters from J. B. Wight, November, 1906; also The Nut Grower, June, 1906, p. 199.

^d Wm. Nelson in The Nut Grower, August, 1906, p. 18.

filled, with shallow grooves; texture of meat firm, fine grained, solid, creamy in color; flavor delicate, rich; quality very good.

The specimens illustrated on Plate XXXII were grown by Mr. J. B. Wight, Cairo, Ga.

The tree is of more slender and upright habit of growth than Frotscher, and is reported to be fully as productive as that variety in Georgia and Florida. It is worthy of trial wherever that variety succeeds.

CURTIS PECAN.

(SYNONYM: *Curtis No. 2.*)

The original tree of this variety was grown by Dr. J. B. Curtis, of Orange Heights, Fla., from a nut of the "Turkey Egg" pecan obtained from Arthur Brown, of Bagdad, Fla., in 1886. It bore about a dozen nuts in 1893, and has borne a crop each year since then, except in 1902, when heavy rains at blooming time prevented fertilization of the blossoms. It was first propagated by Doctor Curtis in 1896, and was disseminated by him somewhat later. The original tree, though heavily cut for scions, yielded 80 pounds of nuts in 1905.^a The variety appears to have been first described and illustrated by Hume^b in 1900.

DESCRIPTION.

Size medium, 60 to 70 nuts per pound; form ovate conical, compressed, with a sharp pointed base and an inclination to curve near apex; color bright, with very few black stripes, but sparsely stippled with black over most of the surface; shell very thin and brittle; partitions thin; cracking quality good; kernel very plump and thick, free from indentation other than the narrow grooves, which are of medium depth; color bright, except certain brownish stippling that perceptibly darkens the tint in some specimens; texture firm, crisp; flavor sweet and rich; quality very good.

The specimens illustrated on Plate XXXII were grown by Dr. J. B. Curtis, at Orange Heights, Fla.

The tree is reported to be slender and rather pendulous in habit of growth and regularly productive. The variety is of special promise for Florida growers, as it is one of the few sorts that have originated and been thoroughly tested in that State. It is reported to be rather hard to propagate, the wood being slender and the buds not numerous. Doctor Curtis reports it free from attack by the bud worm where such sorts as Rome and Centennial are badly damaged by it.

^a Dr. J. B. Curtis in the Nut Grower, June, 1906, pp. 200-201, and letter of February 11, 1907.

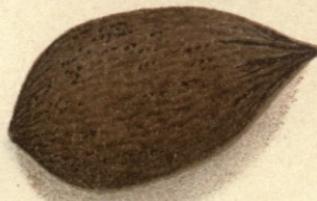
^b Florida Agricultural Experiment Station Bulletin 54, August, 1900, pp. 203-209.



ALLEY.



TECHE.



CURTIS.



GEORGIA.



DELMAS.

E. J. Schutt

PECAN VARIETIES.

A. HORN & CO. BALTIMORE

GEORGIA PECAN.

(SYNONYM: *Georgia Giant.*)

The original tree of this variety is one of a large number of seedlings grown in nursery row by Mr. G. M. Bacon,^a of Dewitt, Ga., from nuts of unknown parentage in 1885. Enough of these seedlings for a 30-acre orchard when planted 30 feet apart were transplanted to their present locations the following year. In 1891 this tree, which was the first in the orchard to bear, yielded 32 nuts, which are said to have weighed 1 pound. The following year its crop was $2\frac{1}{2}$ pounds, increasing annually until 1902, when it yielded $4\frac{1}{2}$ bushels of nuts. Its bud propagation, begun in that year, has resulted in such heavy cutting of the young wood that the crops since then have been comparatively light.

DESCRIPTION.

Size large to very large, averaging 40 to 50 nuts per pound; form round ovate, with a tendency toward inequality of sides; color rather dull and dark grayish brown, sparsely striped with black; shell rather thick, with moderately thick and soft partitions, yet cracking well; kernel broad, plump, rather bright and very attractive; texture rather soft and inclined to be coarse, though of pleasant flavor and excellent quality.

The specimens illustrated on Plate XXXII were grown by the G. M. Bacon Pecan Company, at Dewitt, Ga.

The tree is a sturdy, strong grower, precocious and productive, and worthy of thorough test throughout Georgia and adjacent States.

DELMAS PECAN.

The original Delmas pecan tree was grown from a nut planted by Mr. A. G. Delmas at his place at Scranton, Miss., about 1877. It began bearing in 1884, and has been known under the name Delmas since the following year. It was propagated in a limited way by Mr. Delmas about 1890 by grafting both in nursery and orchard. Its general dissemination, however, appears to have occurred in connection with the "Schley" about 1902, mixed scions of the two varieties received from Mr. Delmas having been grafted in the Pierson nursery, at Monticello, Fla., and disseminated under the name Schley before the admixture was discovered. The wood of the Delmas is so much stouter and more erect than that of the Schley variety that little difficulty is experienced in separating them even in the nursery row.

The original Delmas tree was blown down by the September storm of 1906 before the crop was ripe, but was severely headed back soon thereafter and righted, so that it is hoped it will survive.

^a Letter from H. C. White, Dewitt, Ga., January, 1907.

DESCRIPTION.

Size large to very large, averaging 40 to 50 nuts per pound; form oblong ovate, rather pointed at base and rather bluntly quadrangular at apex; and distinctly marked by four conspicuous ridges extending from the apex nearly to the base of the nut; color grayish brownish, sparingly marked with black; shell rather thick, with partitions soft but corky; cracking quality good; kernel plump and well filled, grooves rather narrow, but shallow, and surface undulating; kernel bright straw color, very attractive; texture rather soft and open; flavor sweet, pleasant; quality good.

The specimens illustrated on Plate XXXII were grown by Mr. A. G. Delmas, Scranton, Miss.

The tree is a strong grower, of erect and roundish head, very distinct from the Schley, with which it has been somewhat mixed in nurseries and orchards. It is productive and promising for the lower pecan districts, such as the Gulf coast region, where it originated.



O. C. Johnson
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AM

PROMISING NEW FRUITS.

By

WM. A. TAYLOR,

Pomologist in Charge of Field Investigations, Bureau of Plant Industry.

[REPRINT FROM YEARBOOK OF DEPARTMENT OF AGRICULTURE FOR 1907.]

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PRONTO ALLENAMENTO

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mesenteric arteries
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Pomologist in Charge of Field Investigations, Bureau of Plant Industry.

INTRODUCTION.

For many years there has been a strong tendency in the American fruit trade to urge that fruit growers reduce the number of varieties in their commercial plantations. When commercial fruit growing was developing out of the old-time family orchard, with its succession of varieties ripening throughout the season, such advice was undoubtedly good for the average individual planter, but there appears good ground for the belief that a point has been reached in several of our orchard fruits where a wider range of season and quality would result in a steadier net income from the fruit crop, and therefore in a sounder business condition in the fruit industry in many sections. Attractive diversity in appearance and quality stimulates a demand for fruit among consumers and is worthy of recognition by the fruit grower as an important factor in determining his selection of varieties for planting. If he has several varieties in his orchard rather than a single one or two, the advantages of cross pollination are secured also, and the risk of loss of crop through unfavorable weather at the blossoming season is reduced.

The varying requirements of our domestic and foreign markets and the importance of growing in each section of the country those varieties that are best adapted to the climatic and cultural conditions there, render familiarity with new types and varieties important to all progressive fruit growers.

The present article, in connection with those that have preceded it on the same subject in the Yearbook since 1901, calls attention to several recently introduced or little-known fruits that are considered worthy of testing in various sections of the country.

DELICIOUS APPLE.

[PLATE XXIX.]

This variety first came to notice in the orchard of the late Jesse Hiatt, of Peru, Madison County, Iowa, about 1881. It was then a sprout, supposed to be about 6 years old, from the stock of a Yellow Bellflower tree, the top of which had been destroyed. The beauty and

fine quality of the fruit attracted Mr. Hiatt's attention and he at once began its propagation in a small way for his own planting. The tree proved to be a hardy, vigorous, upright grower, with very heavy, dark-green foliage, and a regular annual bearer. At 15 years of age the original sprout was reported to be 13 inches in diameter at the ground. The originator stated in 1896 that while three-fifths of his orchard had been destroyed by drought and cold during the preceding eight years, "Delicious" had not been injured in any respect. The name "Hawkeye" was at one time applied to the variety by the Hiatt family and locally used, but does not appear to have been published in connection with it and is therefore not entitled to recognition as a synonym.

The right to propagate and sell the variety for a term of five years having been sold to the Stark Brothers Nurseries and Orchards Company about 1894, with the right to rename the variety,^a it was commercially introduced by that firm in 1895 under the name "Delicious," which word was registered in the United States Patent Office as a trade-mark July 4, 1905.

DESCRIPTION.

Form roundish conic, sometimes indistinctly ribbed and knobbed at apex; size medium to large; surface smooth, glossy, taking a high polish when rubbed slightly; color clear, translucent, pale yellow, washed over most of the surface with mixed red, striped and splashed with dark crimson, and in dry climates covered with a thin whitish bloom; dots numerous, small yellow; cavity regular, of medium size, deep, russeted; stem medium to long, stout, curved, downy; basin regular, of medium size, depth, and slope, slightly furrowed and somewhat downy; calyx segments medium, converging, eye of medium size, closed; skin moderately thick, tenacious; core of medium size, oval, clasping, open; seeds numerous, plump, medium, brown; flesh yellowish, moderately fine grained, breaking, juicy; flavor mild sub-acid, quality very good. Season December to March, in Madison County, Iowa.

Though lacking such marked and distinctive quality as characterizes our best apples, such as Esopus, Jonathan, Northern Spy, Grimes, and Yellow Newtown, this variety is acceptable to most palates and is apparently entitled to high rank as a dessert fruit. The tree is a strong, upright grower, apparently sufficiently productive to satisfy commercial requirements. In the locality of its origin it is apparently rather susceptible to apple scab and will therefore need to be thoroughly sprayed for that disease in cool and humid climates. It has been fruited on young trees during the past four or five years in most of the apple districts west of the Mississippi River and appears to be

^a Letter of S. L. Hiatt, Peru, Iowa, November 7, 1905.

specially promising in the Rocky Mountain and Pacific coast States. The specimen illustrated in Plate XXIX was grown by Mr. S. L. Hiatt, Peru, Madison County, Iowa.

ENSEE APPLE.

[PLATE XXX.]

This promising new sort originated about 1880 as a chance seedling near a place where cider had been made in earlier years on the farm of the late Nelson Cox, in Windsor Township, Lawrence County, Ohio. Little notice was taken of it for several years after it began bearing, until 1895, when its crop began to attract attention. Since then it has been somewhat disseminated in an experimental way, and commercially to a slight extent by the sons of Mr. Cox.

The tree is described as rather upright and spreading in habit, with rather pale bark. It blossoms just after Ben Davis and is considered a productive and regular bearer.

The coined name "Ensee" was applied to the variety about 1898 in perpetuation of the apple brand (N. C.) of the originator, who was for many years recognized as one of the leading commercial apple growers of his region.

DESCRIPTION.

Form roundish to roundish oblate; size large; surface rather smooth, undulating; color pale yellow washed with mixed red, splashed and brokenly striped with bright crimson, frequently over-spread with gray; dots variable, some russeted and aureole, many of those near the apex being indented; cavity irregular, large, deep, abrupt, russeted, and sometimes lipped; stem short, moderately stout; basin deep, abrupt, furrowed, downy; calyx segments small, converging, reflexed at tip; eye small, nearly closed; skin thick, tenacious; core of medium size, roundish, clasping, open; seeds numerous, of medium size, plump; flavor subacid, rich; quality very good. Season late autumn and early winter in Lawrence County, Ohio, keeping well in cold storage. This variety is apparently deserving of test throughout the Middle States and the irrigated valleys of the West, as it is an apple of large size and fine quality, adapted to home use and special markets. The specimen illustrated on Plate XXX was grown by Cox Brothers, Rockwood, Lawrence County, Ohio.

LAMBERT CHERRY.

[PLATE XXXI.]

The large size and fine color of the sweet cherries grown in the Willamette and Columbia river valleys in Oregon have for many years attracted the attention of cherry growers and users to those sections,

which seem peculiarly adapted to the production of this fruit. Fortunately for the reputation of the Willamette Valley, the earliest introduction of cherries there (in 1848 by Henderson Lewelling, at Milwaukee, Oreg.) appears to have included some of the choicest varieties, so that the planters of that district were not compelled to go through the long and trying experience with seedlings of indifferent quality that is common in newly settled regions. At the same time some very promising seedlings from these older sorts have in recent years come to light, some of which, such as Republican, Bing, and Hoskins, have attained considerable commercial importance.

One of the most promising of these new sorts is the Lambert. This variety appears to have originated^a as a seedling under a Napoleon (syn. *Royal Ann*) tree in the orchard now owned by Mr. J. H. Lambert, at Milwaukee, Oreg., which was planted by the late Henderson Lewelling during and shortly after 1848. This seedling tree, which is supposed to have been a cross of Black Heart on Napoleon, was grafted to May Duke before it reached bearing age and transplanted to a location at one end of the old orchard. About 1880 the May Duke top was broken off or died, and a sprout from the seedling stock was permitted to form a new top to the tree. When it came into bearing its fruit attracted Mr. Lambert's attention, and shortly after 1890 small shipments of it sent to Boston and other eastern markets sold at much higher prices than other varieties shipped at the same time.

In 1895 Mr. Lambert gave to the Oregon State Horticultural Society the exclusive right to propagate and disseminate the variety from the original tree and a few trees that he had grown from it, but scions having been previously secured by other persons without his knowledge, the society derived little financial benefit from its introduction.

So far as known, it has not been extensively planted east of the Rocky Mountains, but it is considered worthy of testing wherever sweet cherries thrive.

DESCRIPTION.

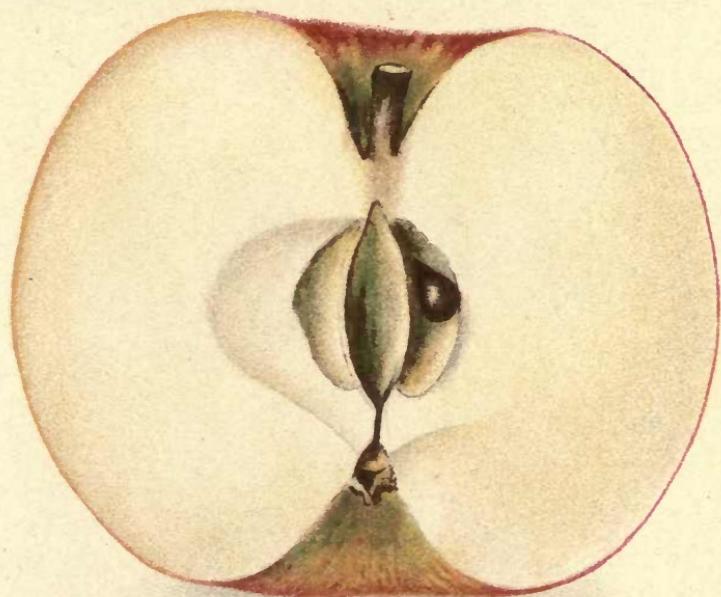
Form oblong, heart-shaped; size large to very large; cavity of medium size and depth, with gradual slope; stem medium to long, rather slender; suture a mere line, terminating in a russet dot in a slight depression at the apex; surface smooth, except for numerous fine indented dots; color light red, beautifully marbled with darker red; skin moderately thick, tenacious; stone oval, rather large, adhering rather closely to flesh; flesh purplish red, with lighter mar-

^a Letters of E. L. Smith, Hood River, Oreg., and H. M. Williamson, Portland, Oreg., August, 1907.



D.G. Passmore

DELICIOUS APPLE.



D.G. Passmore

ENSEE APPLE.



D.G. Passmore

LAMBERT CHERRY.

bling, meaty, juicy; flavor sweet, rich; quality good to very good. Season rather late, following Bing.

The fruit is borne in large clusters, a twig $3\frac{1}{2}$ inches long received in 1907 having 23 well-developed fruits upon it. The tree is a strong and vigorous grower, with large leaves.

The specimens illustrated on Plate XXXI were grown by Mr. J. R. Nunnemaker, Hood River, Oreg.

MILLER PERSIMMON.

[PLATE XXXII.]

While the Japanese persimmon or kaki (*Diospyros kaki*) has received much more attention from American fruit growers than our native species, the most widely distributed and abundant of these, *Diospyros virginiana*, is gradually creeping into cultivation and will doubtless eventually be recognized as an important economic species throughout our southern States. Though lacking the large size and brilliant color of the Oriental type, the superior hardiness of the tree of the native species, coupled with its regularity of bearing and endurance of climatic vicissitudes, largely compensates for these shortcomings. The choice varieties that are gradually being brought to light are also of richer flavor and finer quality than any of the Japanese sorts yet introduced.

One of the largest and most promising of these from the commercial standpoint is the Miller, which was discovered by Col. J. C. Evans in 1894, in Jackson County, Mo., in an abandoned field on the farm of a man bearing that name.^a Colonel Evans secured scions from this tree and now has an orchard of 200 trees of the variety in bearing. He finds it a regular and abundant bearer and markets the fruit in Kansas City and other city markets in 8-pound grape baskets, which usually sell for 50 to 75 cents. At these prices he considers it the most profitable fruit he grows. He contemplates using paper boxes of a size that will hold about 1 dozen persimmons, so that the fruit can be left on the tree until it begins to soften and still stand shipment for considerable distances.

DESCRIPTION.

Form roundish oblate; size large to very large for its class; cavity regular, small, shallow; calyx large, 4 or sometimes 5 parted; stem short, moderately stout; apex a point protruding from a very slight depression; surface moderately smooth; color reddish, translucent, covered with profuse bluish white bloom; flesh yellowish, translucent, with yellow veins and quite meaty; seeds medium, plump, broad, brown, rather numerous; flavor sweet and rich, though

^a Letter of J. C. Evans, Harlem, Mo., October, 1907.

slightly astringent until fully ripe and soft. It ripens in September in Jackson County, Mo., on thin dry land, but on richer soil and under cultivation is considerably later and can be marketed during a period of several weeks during autumn and early winter without resorting to cold storage. The specimens illustrated on Plate XXXII were grown by Col. J. C. Evans, Harlem, Mo.

The tree is a strong grower and regularly productive. It is considered worthy of testing in all persimmon-growing sections where a large variety, ripening late, is desired.

RUBY PERSIMMON.

(SYNONYM: *Little's Ruby*.)

[PLATE XXXIII.]

This choice variety was disseminated by the late James A. Little, of Cartersburg, Ind., about 1897,^a the exact time and place of its origin being at the present time unknown. It is supposed to have reached Mr. Little in the form of scions from a correspondent.^b It has been somewhat confused with a variety experimentally disseminated by the late Judge Samuel Miller about 1899 or 1900 under the same name, which was found as a wild tree on his grounds at Bluffton, Mo., about 1883.^c

DESCRIPTION.

Form roundish oblate; size medium; cavity regular, of medium size, shallow; calyx 4-lobed, entire; stem short, rather slender; apex small, protruding; surface smooth; color yellowish red, shading into deep red, and covered with a thin whitish bloom; dots minute; skin thin, rather tender; seeds rather small, plump, brown, few (4 to 6); flesh translucent, dark orange color, meaty, moderately juicy, sweet, though with a slightly astringent aftertaste until fully ripe; quality very good.

Season variable, ripening without frost, though hanging to the tree until after freezing if not harvested earlier. The tree is abundantly productive in Hendricks County, Ind., and is reported to be so at Farmingdale, Ill., by Mr. Benjamin Buckman,^d who has fruited it there. Though of only medium size, the earliness, beauty, fine quality, and productiveness of this variety render it very promising for growers in the more northern portions of the persimmon region.

Mr. Little reported that he was unable to supply the demand for it in the Indianapolis market at 10 cents per pint when marketed in

^a Letter of F. O. Harrington, Williamsburg, Iowa, March, 1908.

^b Letter of Alonzo Little, Cartersburg, Ind., March, 1908.

^c Letter of Samuel E. Miller, Bluffton, Mo., March, 1908.

^d Letter of Benj. Buckman, Farmingdale, Ill., Nov. 1, 1907.



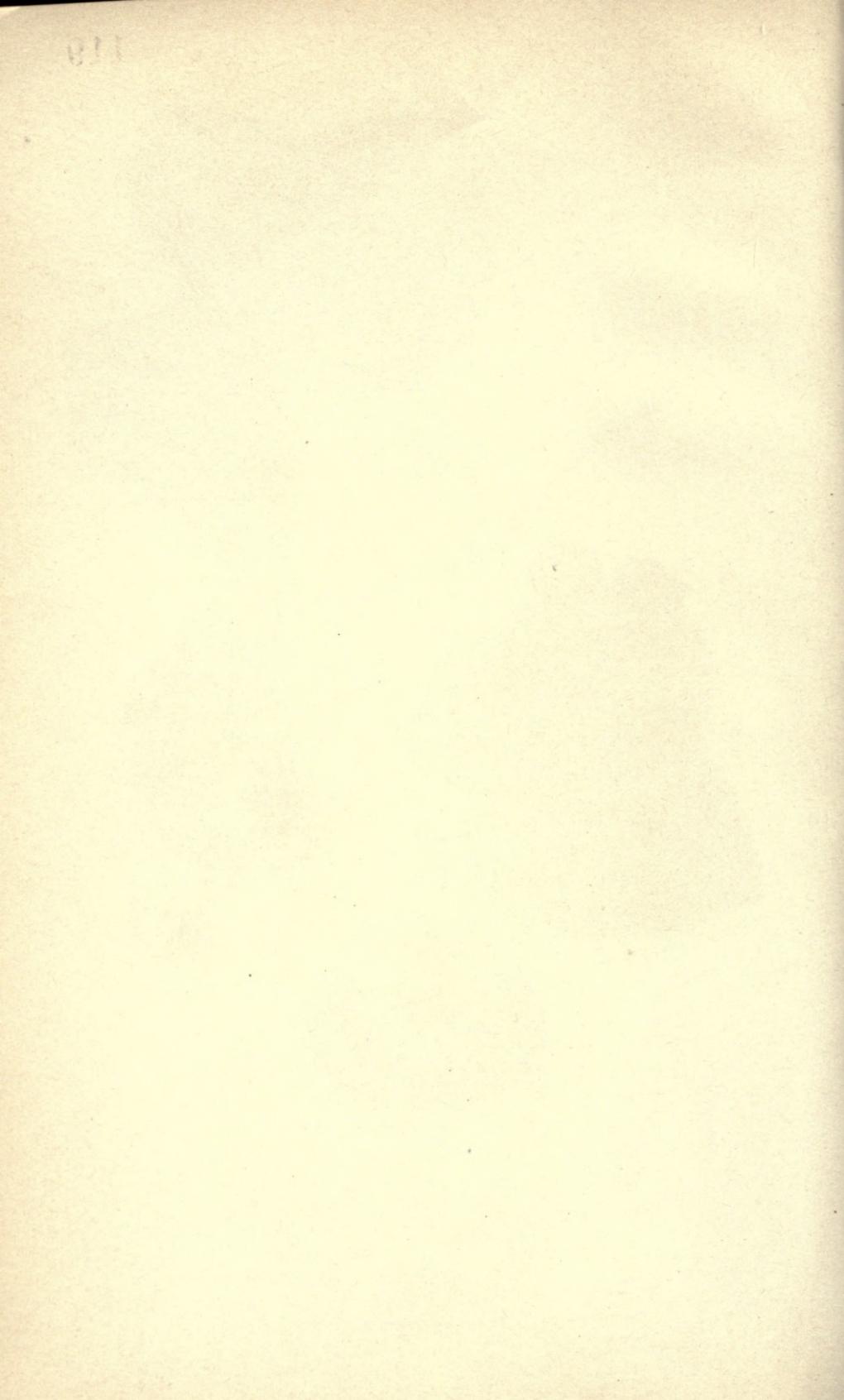
MILLER PERSIMMON

D.G. Passmore



D.G. Passmore

RUBY PERSIMMON.



common pint berry boxes packed in crates. With this and other varieties he found that the number of seeds per fruit was considerably less when they were grown at a distance from male trees, though the flavor and quality of the fruit appeared to be slightly lowered as the number of seeds was reduced. The specimens illustrated on Plate XXXIII were grown by the late James A. Little at Cartersburg, Ind.

KING ORANGE.

(SYNONYM: *King of Siam.*)

[PLATE XXXIV.]

This most interesting and delicious orange has, from the time of its introduction to this country, been classed with the mandarins and tangerines under *Citrus nobilis*, but is so distinct in tree, fruit, and time of ripening from the "kid glove" representatives of that species that it appears worthy of recognition as a distinct horticultural group if not as a subspecies. It is apparently the first citrus variety of high quality to reach the United States by direct importation from the early home of the genus in farther India, rather than by slow migration through western Asia and the Mediterranean region of Europe.

The variety appears to have been introduced through the interest aroused in the mind of Mrs. Dr. S. R. Magee,^a of Riverside, Cal., by an account in a magazine of an orange of high quality grown in China. In an effort to secure trees of this she wrote to her personal friend and former fellow-townsman, Hon. John A. Bingham, then United States minister to Tokyo, for assistance. This correspondence resulted in the shipment by Minister Bingham to Doctor Magee of six fruits secured at Saigon, Cochin China, packed in powdered charcoal, which reached him in February, 1880, after having been about two months in transit.^b

Two of these fruits were decayed when received, but one of the sound ones, which was tested on arrival, was pronounced by those who tasted it superior in texture and flavor to any oranges previously tested by them. It was stated in the reports published at the time that Minister Bingham reported when he sent the fruits that the gardener in the "Imperial Gardens," from which the fruit was taken, stated that it would be almost impossible so to pack the trees that they would stand so long a journey, but that this fruit could be propagated from the seed. Doctor Magee accordingly planted the seeds of these oranges and grew from them by the following autumn 30 seedlings a foot high. He had meanwhile renewed the request

^a Statement of Mrs. J. K. Magee, Los Angeles, Cal., April 6, 1908.

^b Riverside Press and Horticulturist, February 14, 1880, and October 16, 1880.

for trees of the variety, and in October of the same year received from Minister Bingham, via S. S. *Peking*, a box containing "twenty-five young plants of the King Orange,"^a sent just as they were received from Saigon. Minister Bingham stated that he had secured these through the favor of his esteemed colleague, Mons. R. de Bollay, chargé d'affaires of France in Japan. These imported trees appear to have been seedlings and from the botanic garden at Saigon, where the French had been in control for some thirteen years prior to 1880.

Whether both the imported trees and the seedlings grown by Doctor Magee were budded from is not entirely clear, but that more than one seedling tree was thus perpetuated seems strongly probable and possibly accounts for the rather wide range in habit of growth, thorniness of wood, and quality of fruit found under this varietal name to-day.

Doctor Magee appears to have first sold trees of it in 1882,^b but so far as known the variety was first fruited in America by Mr. J. E. Cutter about 1885 on top-budded trees, specimens grown by him having been sent to the New Orleans Exposition in that year. Mr. Cutter sent specimens of the fruit to the late William Saunders, Horticulturist of the Department of Agriculture, in March, 1887,^c these being the first that reached the Department. Mr. Cutter is reported to have developed a much less thorny strain than that first disseminated,^d and most of the stock of King grown in Florida appears to trace to his dissemination of the variety, though according to Reasoner^e two of the imported trees and buds from others were sent to Mr. John Carville Stovin at Winter Park, Fla., in 1882, presumably by Doctor Magee. The variety also reached Florida in 1882 in the form of buds received from Doctor Magee by the Beed, Knox & Beed Company, of Bulow, Volusia County, in July of that year.^f These buds were considered by Mr. L. B. Knox to have been cut from a single tree, and as the trees grown from them were very thorny Mr. Knox and his associates practiced systematic bud selection in their propagation with a view to getting rid of the thorns. In this effort they rebudded some of the trees twice in a season, and were eventually successful in reducing the thorniness to a considerable extent. About 1884 and for some time thereafter they disseminated the variety considerably through Florida. On March 10, 1887, they

^a Letter of Hon. John A. Bingham to Dr. S. R. Magee, September 16, 1880, furnished by Doctor Magee's daughter, Mrs. Cunningham, of Riverside, Cal., April, 1908.

^b Riverside Press and Horticulturist, July 8, 1882.

^c Letter of J. E. Cutter to William Saunders, March 12, 1887.

^d Letter of E. L. Koethen, Riverside, Cal., March, 1908.

^e Division of Pomology Bulletin No. 1, 1888, p. 73.

^f Letter of L. B. Knox, April 22, 1908.

shipped to New York the first box of fruit of the variety marketed in the United States. This box is reported to have sold for \$7 in that market.

The variety has not proved well adapted to the present citrus districts of California and has attained little commercial importance there. In certain localities in Florida it attains high perfection, however, and when well grown, so as to be free from thorn scars and sunburn, it brings higher prices in northern cities late in spring than any other variety grown in that State.

The tree is of stiff and upright habit, sprawling awkwardly when in fruit, and is peculiarly subject to breakage of limbs, owing to the brittleness of its wood. As introduced the variety was very thorny, but the strain disseminated by Mr. Cutter is a distinct improvement in this respect. The evident close reproduction of the more important and desirable characteristics through seed suggests the strong probability of the existence of other desirable allied sorts in the region from which it came.

DESCRIPTION.

Form oblate to roundish oblate, often irregular; size medium to large; surface lumpy and uneven, frequently giving the fruit a rather uncouth appearance; oil cells large, numerous, depressed; color dark reddish orange; base often contracted and grooved; calyx small; stem slender; apex an irregular dot in a broad, shallow depression; rind moderately thick, rather soft, and possessing a distinctive aroma and flavor, agreeable to most persons; much more closely adherent to the flesh than that of the true mandarins; segments 10 to 13, fairly even in size, rather loosely attached, leaving an open, pithy center; flesh very dark orange, loose and soft in texture, with large, tender juice vesicles; seeds rather numerous, medium to large, long, pale green; juice abundant, having a rich orange color when fully ripe and a peculiarly rich, sweet, sirupy flavor, with a distinctive and agreeable aroma; quality very good; season late, March to May in the Florida orange districts.

As found in the markets the fruit of King is quite variable, the same "strap" or half box often containing specimens of the very highest quality and flavor with others of indifferent quality. This fruit probably needs more protection against sudden and extreme climatic changes than most varieties of its class, but taken at its best it ranks with the very best oranges in quality and is therefore worthy of the attention of commercial growers for special markets that demand and will pay for such quality. The specimen illustrated on Plate XXXIV was grown by Mr. John Fabyan at Conant, Lake County, Fla.

SANDERSHA MANGO.

(SYNONYMS: *Sandershaw*, *Soondershaw*, *Sundershah*.)

[PLATE XXXV.]

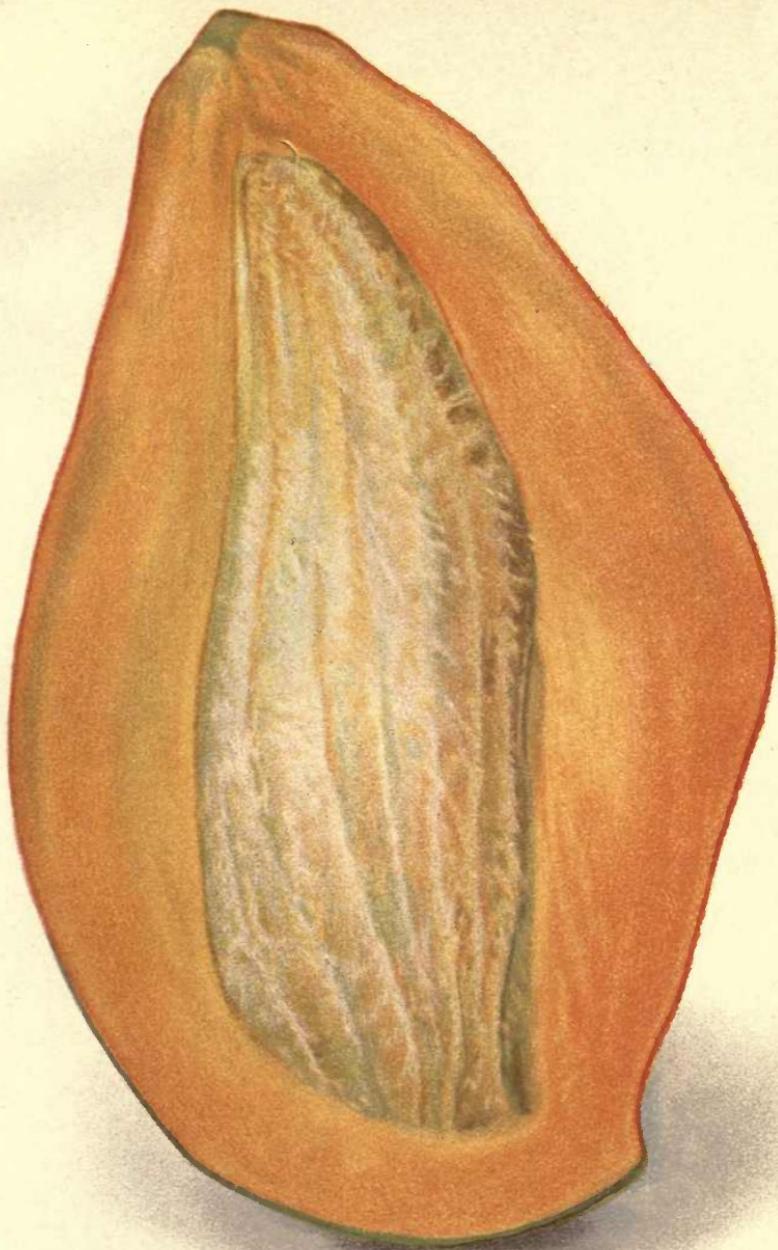
Since the superiority of quality of the choice Indian varieties of the mango over that of the common seedlings of tropical and subtropical America became evident through the fruiting of the Mulgoba in Florida in 1898 and subsequent years, there has been an active interest in the introduction of other reputed choice varieties of this most interesting fruit. A large number of such have been brought from India and some from other tropical countries by the Office of Seed and Plant Introduction of the Bureau of Plant Industry, while private enterprise has become sufficiently interested to import considerable numbers of certain sorts.

Of those that have fruited sufficiently in Florida thus far to disclose their distinctive characteristics, the Sandersha is one of the most unique and in certain respects the most promising. It was introduced by the then Section of Seed and Plant Introduction in 1901^a (S. P. I. No. 7108), having been received from A. Lehmann, Ph. D., Bangalore, India, on July 31 of that year in the form of two inarched trees. A second lot of inarched trees received from Mr. W. Gollan, superintendent of the Government Botanic Garden at Saharanpur, India, under the name "Sundershah" (S. P. I. No. 10665) has not yet fruited, but is supposed to be the same sort. Little appears to have been published in India regarding the variety, but at the Subtropical Laboratory of the Department at Miami, Fla., where it has been fruited for two seasons, it has proved very productive, of exceptionally large size, fine dessert quality, and very late ripening season, all of which points are apparently in its favor as a commercial sort. Mr. P. J. Wester, of the Subtropical Laboratory, considers cross pollination necessary to insure productiveness.

DESCRIPTION.

Form long, compressed, and rather slender, tapering toward stem and terminating in a distinct curved beak at the apex; size very large, averaging about 20 ounces in weight, and occasionally attaining a weight of 2 pounds; stem stout, apex prominent, curved and "beaked;" surface smooth; color clear yellow, with a faint pinkish blush in the sun; dots numerous, small, russeted; skin moderately thick; seed long, curved, thin, small in proportion to size of fruit and thickness of flesh; flesh rich reddish yellow, juicy and tender, almost entirely free from fiber; flavor sprightly and refreshing in the fresh state, though with rather less aroma than Mulgoba. Its higher acidity will doubtless render it more acceptable for serving in sliced

^a Bureau of Plant Industry Bulletin 66, p. 131, Feb. 8, 1905.

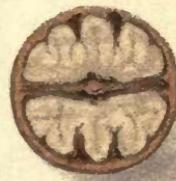
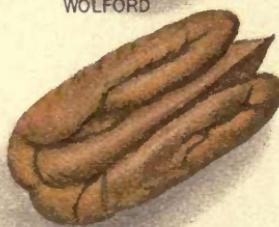


F. A. Newton

SANDERSHA MANGO.



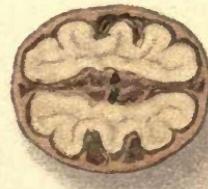
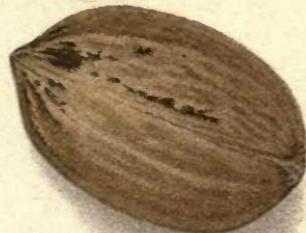
WOLFORD



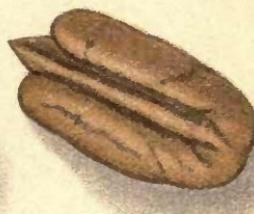
PRESIDENT



SOVEREIGN



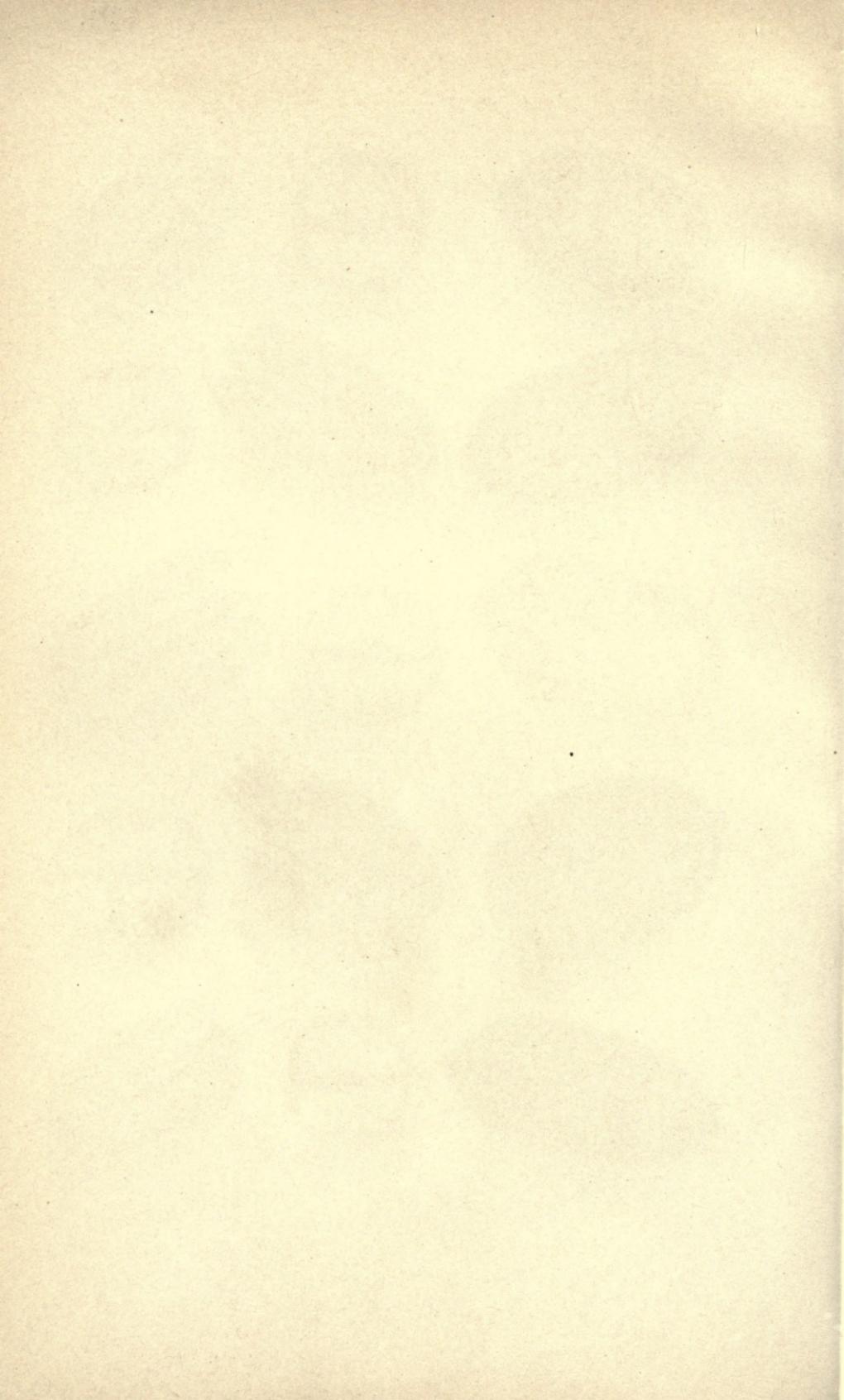
KINCAID



MANTURA

E. I. Schutt.

PECAN VARIETIES



form than are most of the mangoes thus far obtainable in our markets. Season very late, ripening the latter part of August at Miami, Fla. Sandersha is considered well worthy of testing in the mango districts of Florida, Porto Rico, and Hawaii. The specimen illustrated on Plate XXXV was grown at the Subtropical Laboratory of the Bureau of Plant Industry at Miami, Fla.

PECANS.

[PLATE XXXVI.]

As more attention is paid to the pecan as a nut producer in distinction from it as a forest species it becomes increasingly apparent that only a very small proportion of the trees thus far brought to notice possess sufficient merit to justify their perpetuation and dissemination under distinctive names. This is especially true of varieties for commercial orchards, and emphasizes the importance of conservatism in the naming and introducing of varieties at the present juncture, when thousands of planted seedlings in orchards throughout the South are coming into bearing each year. At the same time it is recognized that whenever a seedling is found to possess important characteristics of decided superiority it should be immediately propagated, on an experimental scale at least, to insure its preservation in the event of destruction of the original tree.

WOLFORD PECAN.

The original tree of this variety is a wild seedling about 20 years old standing on land belonging to Mr. H. L. Wolford, in Wilson Creek bottom, near McKinney, Tex. It was called to the attention of Mr. E. W. Kirkpatrick about 1898 by one of his employees, with the result that Mr. Kirkpatrick began propagating it in a small way the following year. He named it in honor of the owner of the tree, and states that he published a description of the variety about 1902.^a The original tree is so located that a considerable portion of each crop is taken by trespassers, so that its actual yield for any year has not been ascertained. It is reported to be a rather slender grower, with tough wood and narrow leaves, and bearing numerous heavy catkins. It is considered one of the most productive varieties grown in that section, bearing many clusters containing 7 or 8 nuts each. In 1907 Mr. Kirkpatrick harvested 20 pounds of nuts from one branch of it, 6 inches in diameter, that had been top-worked on a tree of bearing age.

DESCRIPTION.

Size medium or slightly below, averaging 75 to 90 nuts per pound; form oval to oblong oval, compressed, with a rather blunt, slightly

^a Letter of E. W. Kirkpatrick, McKinney, Tex., December 11, 1907.

curved, quadrangular apex; color rather bright yellowish brown, with few and narrow velvety black markings; shell very thin and quite brittle, with thin and soft partitions, cracking easily; kernel plump, smooth, and full to the tip, with rather narrow but shallow grooves, releasing the shell easily; kernel color bright golden brown, texture fine, meaty, and solid; flavor rich, nutty, and free from astringence; quality very good.

Because of the locality of its origin this variety is worthy of testing throughout the more western pecan districts, both for family use and as a commercial variety. Its productiveness and excellent cracking quality compensate to a considerable extent for its lack of size.

The specimens illustrated on Plate XXXVI, figure 1, were grown on a top-grafted tree by Mr. E. W. Kirkpatrick, McKinney, Tex.

PRESIDENT PECAN.

(SYNONYM: *President Roosevelt.*)

The original tree of the President was grown by Griffing Brothers, of Macclenny, Fla., about 1889, from a nut obtained by them at Bagdad, Fla. The tree was sold by them in 1891 with other seedlings to a customer who planted it in Jacksonville, Fla., where it now stands. The tree is reported to have begun bearing six years after it was transplanted to Jacksonville, and has borne from 70 to 120 pounds of nuts per year in recent years prior to 1907, when it was defoliated by a hailstorm in May, which destroyed the crop. Its propagation was begun about 1902, and it was named and catalogued for sale by the originators in 1903 as "President Roosevelt." In 1904 the name was changed to "President" by the introducers.

The tree is described as a symmetrical, upright grower, but less vigorous than Rome and Van Deman.

DESCRIPTION.

Form oblong, compressed, with a rather sharply pointed base, and quadrangular apex with prominent point; color bright yellowish brown, with a few narrow and broken black stripes near apex; size large—45 to 50 per pound; shell of medium thickness for so large a nut, with thin and soft partitions, cracking easily; kernel long, rather deeply and narrowly grooved, but plump and releasing shell easily; kernel color bright and attractive, texture rather fine-grained for so large a nut; flavor pleasant, free from astringence; quality very good.

This variety is considered one of the most promising large sorts that has originated in Florida and is considered worthy of testing in that State and adjacent pecan districts.

The specimens illustrated on Plate XXXVI, figure 2, were grown in Jacksonville, Fla.

SOVEREIGN PECAN.

(SYNONYM: *Texas Prolific*.)

In 1895, shortly after he had mastered the art of ring-budding the pecan and thus had been enabled to propagate and disseminate the San Saba variety from the original tree of that sort, which stands on his place,^a Mr. E. E. Risien, of Rescue, Tex., planted San Saba nuts from the original tree for the purpose of growing a considerable orchard of seedlings of that variety. He did this in the expectation that a large proportion of the seedlings would come true to the parent, which they failed to do. Certain of the young seedlings early gave evidence of distinctiveness, through their leaf and wood characters, so that as early as 1897 he began top-budding from them on to bearing trees in order to determine as quickly as possible their fruiting quality and other characteristics. A bud from one of these which was thus top-worked in 1897 on an old bearing tree on the San Saba River bottom bore its first nuts in 1898. The precocity thus indicated and the large size, bright color, plump kernel, and fine quality of the new sort caused Mr. Risien to name it "Sovereign" early in 1899, at the suggestion of Mr. A. A. Wheeler, of San Francisco, to whom some of the first crop of nuts had been sent. The exact location in the orchard of the original seedling tree not having been recorded, Mr. Risien began nursery propagation from the bearing top-worked branch and disseminated the variety in the form of 1-year-old ring-budded trees under the name "Sovereign" in 1900. A brief characterization of the variety by the writer, based on specimens of the crops of 1899 and 1900, was published under that name in the *Cyclopedia of American Horticulture* in 1901.^b Meanwhile Mr. Risien listed the variety as "Texas Prolific" in his price list for 1900-1901, which was apparently issued in the fall of 1900. As the latter name consists of more than one word and is otherwise in conflict with the Code of Nomenclature of the American Pomological Society, which has also been adopted by the National Nut Growers' Association, the name "Sovereign" is recognized as having precedence and is adopted in this publication. The top-budded branch above referred to continued to thrive and bear good crops until the season of 1903, when a June freshet in the San Saba River flooded the entire bottom well into the tops of the old bearing trees. The force of the flood and the weight of the driftwood that it carried broke the entire budded branch with its load of nuts from the tree. Fortunately the branch was discovered by Mr. Risien after the flood subsided and before the leaves upon it had wilted. He immediately cut all available bud wood from it, with which he budded about 200

^a Yearbook 1904, p. 413.

^b *Cyclopedia of American Horticulture*, Vol. III, p. 1256, 1901.

young seedlings then growing in his nursery. Of these about 75 lived, thus preserving a good stock of the variety. Close watch has been kept of the trees in the seedling orchard in the hope that the original tree of the Sovereign could be located when it came into bearing, but without success. In the autumn of 1907 Mr. Risien reluctantly concluded that it must have been one of several that had been washed out bodily in some of the freshets which are experienced frequently in that section. The importance of prompt propagation of valuable seedlings in order to insure their perpetuation in the event of the loss of the original tree is emphasized by this experience.

DESCRIPTION.

Size large, averaging 50 to 55 nuts per pound; form oblong to oblong obovate; compressed, with a full and smooth base and a blunt and usually symmetrical apex; surface quite lumpy, conforming to the undulations of the kernel; color bright, yellowish, with long, narrow, striped markings, ranging from bright red to reddish brown in color; shell thin to medium for so large a nut, not a distinct paper shell, like San Saba, Russell, Young, and a few others, but brittle and cracking easily; kernel plump, rather narrowly and deeply grooved, and considerably convoluted, not releasing the shell as easily as some; kernel color bright and clear; texture very fine grained and firm; flavor sweet, rich, nutty, quality very good. The specimens illustrated on Plate XXXVI, figure 3, were grown by Mr. E. E. Risien, Rescue, Tex.

The tree is a moderately strong grower, more vigorous than its parent San Saba, but of the same general character. The variety is considered especially worthy of testing in the more western and arid pecan districts. It has been experimentally planted throughout the South, but not for a sufficient length of time to determine its adaptability to the more humid eastern sections.

KINCAID PECAN.

This variety was brought to light by Mr. E. E. Risien, then of San Saba, Tex., through the offering of a premium for the best variety of pecans brought to him during each season. The tree proved to be a sprout from a stump on land in Wallace Creek bottom in San Saba County, Tex., owned by the late James Henderson and occupied at the time by a Mr. Kincaid, who rented the place. The tree is reported to have since been killed by fire built against it by campers.

The variety was first propagated about 1900 by Mr. Risien and was disseminated by him under that name in the same year.^a

The tree is reported by Mr. Risien to be a vigorous though rather

^a Letters of E. E. Risien, Rescue, Tex., March, 1908.

slender grower, with small narrow leaves with red markings on their stems. It blooms profusely, but rarely sets more than 2 or 3 nuts to the cluster and is therefore considered but moderately productive, though a regular bearer of fair crops. It is reported much easier to bud than either San Saba or Sovereign.

DESCRIPTION.

Size large, averaging 45 to 50 nuts per pound; form broad oblong, compressed, with flat base and blunt quadrangular apex; surface rather smooth, but considerably ridged, especially toward apex; color bright, brownish, with a few scattered brownish splashes toward apex; shell medium in thickness with rather thick but soft partitions, cracking quite easily; kernel broad, flat, plump, smooth, releasing the kernel easily, darker than Sovereign or San Saba, but exceptionally attractive for confectioner's use on cakes or candies; texture rather coarser than the above-named varieties, but decidedly finer than the average commercial pecan; flavor mild, pleasant; quality good. The specimens illustrated on Plate XXXVI, figure 4, were grown by Mr. E. E. Risien, Rescue, Tex.

This variety is especially commended by Mr. E. W. Kirkpatrick, who has given much attention to the examination of Texas pecans, and is considered worthy of testing in the pecan districts from that State westward.

MANTURA PECAN.

So few of the pecan varieties yet found worthy of naming have originated north of the cotton belt that the discovery of a tree bearing good crops of nuts of fair size and good quality regularly as far north as Virginia appears worthy of special note. Such a one the Mantura appears to be. The original tree of this variety stands on the homestead of that name about 5 miles from the James River, in Surry County, Va.^a The tree is one of four grown from nuts planted by Mrs. Wilson, mother of Mr. W. P. Wilson, Fergussons Wharf, Va., the present owner, about 1863. The nuts planted came from a tree still standing at Surry, about 9 miles distant. The Mantura tree is about 11 feet in circumference and 80 to 90 feet high, with a symmetrical spread of top. Up to 1907 it had not missed a crop for fifteen or twenty years, the crop for the previous ten years having averaged 100 pounds and for several years 150 to 275 pounds. Like practically all pecans in the Eastern States the crop of 1907 was very light, owing probably to late frosts and wet weather in spring. The variety attracted the attention of Mr. W. N. Roper, who named it Mantura in 1906 and began its propagation. It was described and illustrated by Hume under that name in 1906.^b

^a Letter of W. N. Roper, Petersburg, Va., June 1, 1906.

^b The Pecan and Its Culture, 1906, p. 44.

DESCRIPTION.

Size medium to large, averaging 60 to 65 to the pound, form long, rather slender, with pointed base and rather blunt apex; surface smooth, color rather bright, with narrow black markings at apex; shell thin, partitions thin and soft; cracking quality excellent; kernel long, slender, not always plump to the tip, but smooth and attractive, with narrow but shallow grooves; kernel color bright and clean; texture fine-grained, firm, oily; flavor sweet; quality very good. The specimens illustrated on Plate XXXVI, figure 5, were from the original tree.

W. L. W.
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GENERAL

PROMISING NEW FRUITS.

By

WILLIAM A. TAYLOR,

*Pomologist in Charge of Field Investigations,
Bureau of Plant Industry.*

[REPRINT FROM YEARBOOK OF DEPARTMENT OF AGRICULTURE FOR 1908.]

2280—09

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PROMISING NEW FRUITS.

By WILLIAM A. TAYLOR,

Pomologist in Charge of Field Investigations, Bureau of Plant Industry.

DEVELOPMENT OF FRUIT DISTRICTS.

The rapidity with which the production, testing, and commercial dissemination of new varieties of fruits is proceeding in a region may fairly be taken as an index to the condition of fruit growing therein. During the pioneer period the fruits planted are usually those brought by the settlers from their former homes or obtained from older settled regions of climatic conditions similar to those existing in the new region in so far as they are understood. Later there follows a period of great activity in seedling production, during which large numbers of varieties of local reputation are enthusiastically disseminated before undergoing a test sufficiently extended and varied to render possible even an approximate estimate of their relative values for given conditions or particular uses.

Gradually the strong and weak points of such varieties are ascertained, and the lists for planting in particular regions and localities, especially in commercial orchards and vineyards, are narrowed down to comparatively few sorts. In America, during the past three or four decades, the general tendency has been to reduce the number of sorts planted to even a much smaller number than in corresponding portions of the European continent. This has been largely due to the influence of the commercial demand for solid carloads or even trainloads of fruit of single varieties at one time to meet a market demand in a more or less remote section of the country or even across the sea.

There is evidence of a reawakening of interest, however, in the growing of a wider range of varieties of some of our more important fruits, such as the apple, for purely commercial ends. There is also indication of a growing discrimination in many markets between general-purpose varieties of ordinary or indifferent quality and some of the choice sorts which are particularly adapted to special uses and therefore worthy of higher prices.

New climatic districts are still being developed through the extension of suitable transportation facilities, as well as by the development of water for the irrigation of soils rich in fertility but hitherto lacking in moisture. The mastery of previously destructive insects

and fungi, through the methods of control that have gradually been developed by entomologists and pathologists, now renders possible the growing of some choice sorts in districts where they formerly could not be depended upon to succeed.

It is the purpose of this article, in continuation of those on the same subject in the Yearbook since 1901, to suggest to fruit growers in various sections of the country certain little known or recently introduced fruits that are worthy of their attention either for the home fruit garden or the commercial plantation.

PATTEN APPLE.

SYNONYMS: *Duchess No. 3*; *Patten's Duchess No. 3*; *Patten's Greening*.

[PLATE XLI.]

The early settlers of the fertile regions of the upper Mississippi Valley took with them trees of many of the standard varieties of fruits of the longer settled country farther east, but soon found that they would not endure the fluctuating and severe winter weather in combination with the hotter and drier summers of the region. Encouraged by the relative hardiness and productiveness of the Oldenburg, Alexander, Tetofski, and Red Astrachan apples, which, though of Russian origin, had been introduced from England by the Massachusetts Horticultural Society about 1835,^a efforts were put forth to secure harder varieties from the colder regions of Europe, particularly from Russia, a work in which the late A. G. Tuttle, of Baraboo, Wis., the United States Department of Agriculture, the Iowa Agricultural College, and a number of nurserymen and fruit growers in various States and the Dominion of Canada participated, from 1866 to a comparatively recent date.

Of the hundreds of varieties thus introduced and tested, most have proved of little value under the new conditions, lacking either in flavor, keeping quality, or other important characteristics of fruit, or in blight resistance on the part of the tree. A few valuable sorts have been thus obtained, however, which are doubtless proving a sufficient recompense for the expenditure of labor, time, and money occasioned by this introduction work.

Meanwhile, from these and the earlier introductions, there have been appearing in recent years a considerable number of American seedlings, from which will doubtless eventually come the varieties adapted to the peculiar conditions of the region. Some of these are distinct improvements on the parent varieties in vigor of growth, time of ripening, resistance to blight, and other important characteristics, and while none of those of proved "ironclad" hardiness yet

^a John Craig, in *Cyclopedia of American Horticulture*, p. 1404.

developed has revealed high dessert quality, some of them show distinct improvement in this particular.

Among the most promising hardy sorts thus developed is the Patten, which was grown from seed of Oldenburg planted by Mr. C. G. Patten, at Charles City, Iowa, in 1869. Mr. Patten named the variety Patten's Greening, and introduced it in 1885, since which time it has been widely disseminated through the States of the upper Mississippi Valley and throughout the adjacent portions of the Dominion of Canada. Its vigorous and sturdy tree, coupled with regular and sufficient productiveness in climates too severe for most varieties, and its longer keeping quality than most of the hardy sorts, render it increasingly popular in those regions.

DESCRIPTION.

Form roundish oblate; size large; cavity regular, of medium size and depth, with gradual slope, russeted; stem of medium length, stout, downy; basin regular, of medium size and depth and gradual slope, sometimes slightly russeted and leather cracked; calyx segments rather broad, converging; eye large, closed; surface smooth; color greenish yellow, with a dull bronze blush on the sunny side, occasional high-colored specimens attaining a brilliant crimson blush; dots scattered, russet or gray, with subcutaneous green bases; bloom whitish; skin rather thick, tenacious; core roundish oval, of medium size, nearly closed, clasping; seeds plump, medium in size, brown, few; flesh yellowish, moderately fine grained, breaking, juicy; flavor subacid to rather acid; quality good, especially for culinary use. Season October to January in the upper Mississippi Valley. The variety is recommended for that region and for those portions of the Rocky Mountain States which experience winter temperatures too low for the standard varieties.

The specimens illustrated on Plate XLI were grown at the Central Experimental Farm at Ottawa, Canada, and were furnished through the courtesy of Prof. W. T. Macoun, horticulturist.

BENNETT APPLE.

SYNONYM: *Bennett Seedling*.

[PLATE XLII.]

This promising new member of the well-known Winesap group of apples originated as a seedling in an old fence row on the premises of Mr. S. L. Bennett, Medford, Oreg., about 1883. Mr. Bennett cut scions from the seedling about 1893, which he top-grafted into bearing trees on his place. Fruit of it was exhibited at the Charleston Exposition in 1902, where it was awarded a gold medal, and at the St. Louis Exposition in 1904, where it received a silver medal award.

It was first commercially propagated about 1903 by J. S. Barnett, Central Point, Oreg., and was commercially introduced by him. It has been considerably planted in the Rogue River Valley of Oregon during the past five years, but so far as known has not yet been fruited outside of that section.

DESCRIPTION.

Form roundish conical, often unequal; size large to very large; cavity regular, large, deep, russeted; stem short to medium; basin regular, of medium size, furrowed and downy; calyx segments long, narrow, converging, slightly reflexed at tips; eye medium, closed; surface smooth, gently undulating; color deep yellow, washed with mixed red and brokenly striped with crimson; dots small, yellow, many indented; skin medium thick, tenacious; core of medium size, broad, conical, clasping, closed; seeds small, plump, brown, numerous; flesh yellow, moderately fine grained, breaking, juicy; flavor rich subacid; quality good to very good. Season November to June in Grant County, Oreg.

The tree is described as similar to Winesap in color and appearance of wood and foliage, except that the leaves are larger. It is reported to be an early and heavy bearer.

The variety is suggested for testing in sections where the Winesap succeeds, especially along the northern boundary of the Winesap belt.

The specimens illustrated on Plate XLII were grown by the originator, Mr. S. L. Bennett, at Medford, Grant County, Oreg.

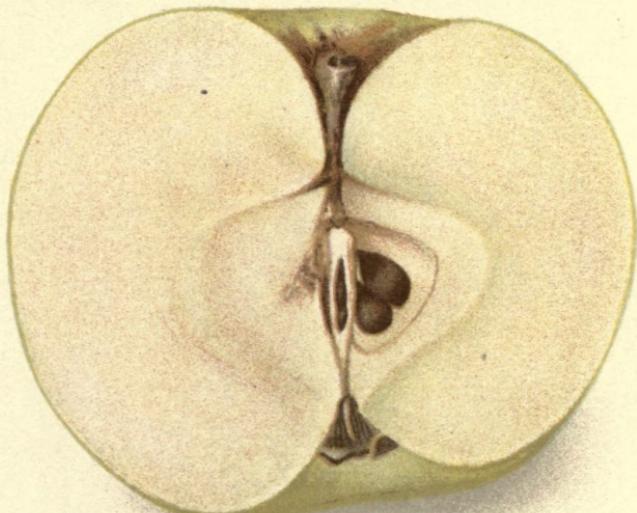
WILLIAMS APPLE.

SYNOMYS: *Early Williams, Ladies, Queen, Williams Early, Williams Early Red, Williams Favorite, Williams Favorite Red.*

[PLATE XLIII.]

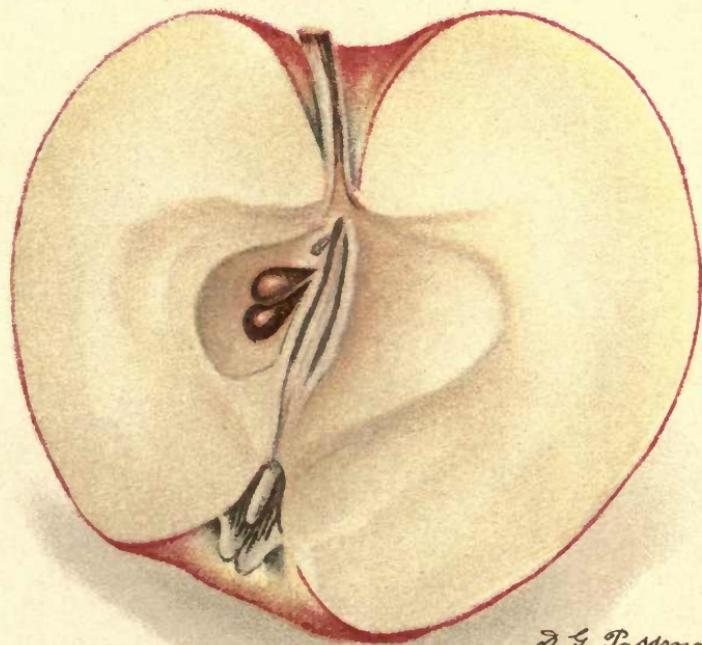
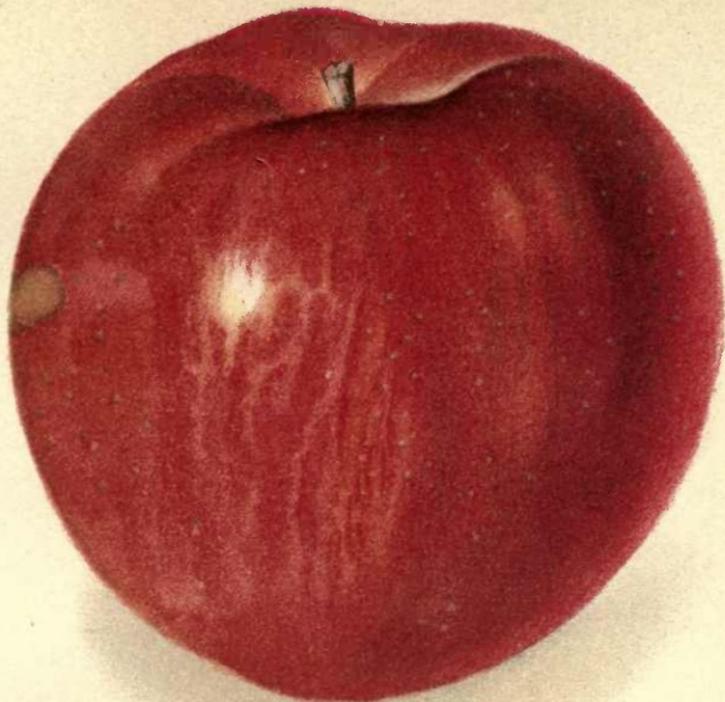
Though discovered as a "wilding" on the farm of Capt. Benjamin Williams, "in that part of Roxbury formerly called Canterbury,"^a more than a century and a half ago, the full merit of this choice summer apple does not appear to have been recognized until recently. The exact time of its discovery does not appear to have been recorded, but by 1830 it was reported by Samuel Downer to have been "well known in the [Boston] market for some years past, under the name Queen, Ladies, etc." The original tree had been blown down some years previous to that time. Fruit of the variety was exhibited by Mr. Downer before the Massachusetts Horticultural Society on July 24, 1830, with the result that the committee which passed upon it recommended that it be called the "Williams" apple, under which name it was published in the New England Farmer on the following

^a C. M. Hovey, Mag. of Hort., 1848, p. 118.



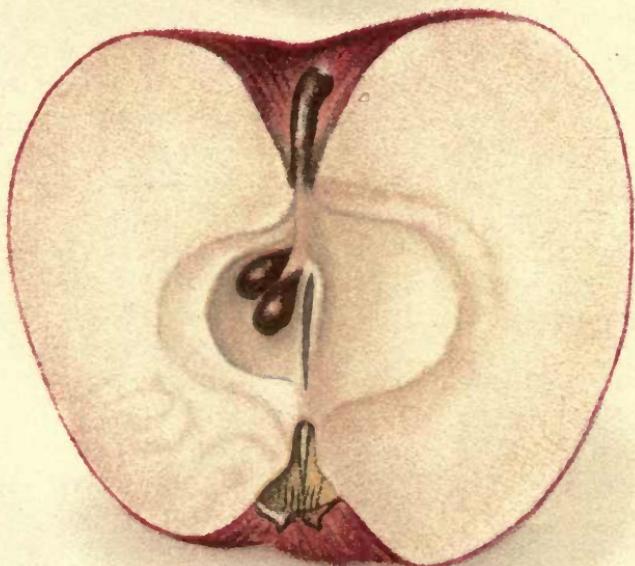
D. S. Passmore

PATTEN APPLE.



D. G. Passmore

BENNETT APPLE.



D. G. Passmore

WILLIAMS APPLE.

Saturday.^a It subsequently acquired numerous synonyms, but has been more widely grown as *Williams Favorite* and *Williams Early Red* than under the original and preferred name, which we follow.

As a commercial sort its planting has chiefly been restricted to the vicinity of Boston and New York until within the past few years, when it has gradually worked its way southward through New Jersey and Delaware, and still more recently has disclosed its special merit as a summer apple for both home use and market in portions of North Carolina and South Carolina, where few northern varieties succeed.

Its firm flesh and relatively tough skin render it one of the best early varieties for long carriage, and such tests of transatlantic shipment as have been made indicate that high prices can be had for it in July and August in the markets of the United Kingdom.

One reason for including the variety in this series is the fact that some other very much inferior varieties (notably *Sops of Wine*) have recently been mistakenly disseminated for it and that the frequency of its submittal to the Department for identification from the Middle and South Atlantic States indicates that it is not well known there.

DESCRIPTION.

Form oblong oval to oblong, sometimes rather angular; size medium to large; cavity small, shallow, often heavily lipped; stem medium to long, often thick and knobbed and usually inserted at an angle; basin small, usually shallow, slightly furrowed; calyx segments broad, converging; eye small, tightly closed; surface smooth, sometimes marked with russet knobs; color whitish yellow, heavily washed and striped with two shades of red; dots numerous, russet, partly indented, some aureole; flesh yellowish white, deeply stained with red at core line; breaking, tender, moderately juicy; core oval, of medium size, slightly open; seeds long, dark brown, numerous; flavor mild subacid; quality good, sometimes very good. Season late July and early August in Delaware.

The tree is a rather slow grower and does better if top-worked on a vigorous stock. Some of the finest specimens of this variety seen in recent years have been grown in Delaware, Virginia, North Carolina, and South Carolina, and its planting in an experimental way in those States is suggested.

The specimens illustrated on Plate XLIII were grown by A. N. Brown, Wyoming, Kent County, Del.

AUGBERT PEACH.

[PLATE XLIV.]

The Augbert peach is stated by the originator, Mr. Joel Boon, of Lindale, Smith County, Tex., to have been grown about 1897 from

^a New England Farmer, Saturday, July 30, 1830, p. 14.

seed of Elberta. The mother tree stood near a tree of Salway, which variety is supposed to have been the other parent. The original tree, which is still living, began bearing at the age of 3 years and has produced seven successive crops, yielding 20 crates of peaches in 1904. Its relatively late season of ripening, coupled with the productiveness of the tree and the beauty and fine quality of the fruit, soon led to its propagation for planting in orchards, and in 1905 to its extensive propagation for commercial dissemination and introduction by C. W. Wood, Swan, Tex., and John F. Sneed, Tyler, Tex. The arbitrary word "Augbert" was registered as a trade-mark for it in the United States Patent Office, June 26, 1906, by Milton E. Fowler, of Lindale, Tex., and its formal introduction appears to date from that year.

DESCRIPTION.

Form oblong oval; size large; cavity regular, large, deep, abrupt, marked with red; stem stout; suture deep, extending beyond apex; apex conspicuous, protruding one-fourth to three-eighths inch above the general outline; surface smooth; color yellow, blushed, mottled and striped with crimson; dots minute; down short, loose, velvety; skin moderately thick, tenacious; stone long, ovate, pointed, medium to large, red, free; flesh thick, yellow, stained with deep red at the stone, tender, melting, juicy; flavor subacid, vinous; good to very good; tree vigorous, productive; leaves lanceolate, of medium size, with short petioles; glands reniform; flowers small. Season August 1 to 20 in Smith County, Tex., two to four weeks after Elberta.

The Augbert, combining, as it apparently does, the productiveness, beauty, and carrying quality of the Elberta with the later ripening season and better dessert quality of Salway, is considered especially promising for Texas and other southern peach districts where a good commercial peach ripening later than Elberta is desired.

The specimens illustrated on Plate XLIV were grown by Milton E. Fowler, Lindale, Smith County, Tex.

CHAMPION PEACH.

[PLATE XLV.]

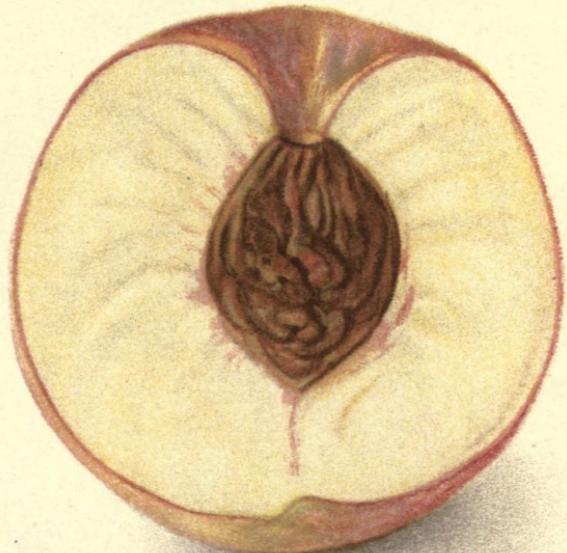
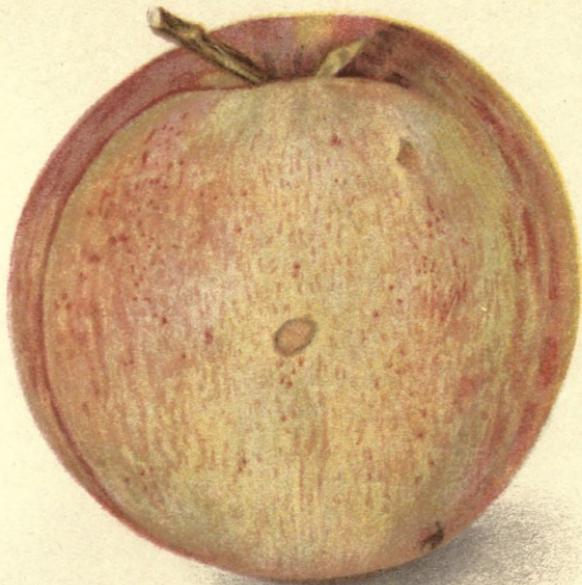
Among the hardy peaches introduced during the past twenty years, perhaps none has more steadily advanced in the estimation of growers in the peach districts of the Middle Western States than the Champion. This variety was originated from seed of Oldmixon Free (supposedly crossed with Early York) by Mr. I. G. Hubbard, Nokomis, Ill., now of San Marcos, Tex., in 1880.^a It was first bud-

^a Letters of I. G. Hubbard, August 18, 1890, March 20, 1909.



Erie E. Lower.

AUGBERT PEACH.



A. A. Newton

CHAMPION PEACH.

ded for his own planting about 1882, and was introduced by him and the Dayton Star Nurseries in 1890. An illustration and description of it were published in the Horticultural Art Journal in December, 1889.^a While rather subject to fungous injury of the fruit in wet seasons, its blossom buds under ordinary conditions endure such low temperatures without injury that it has become recognized as possessing special merit for portions of Illinois, Indiana, Kansas, Nebraska, Iowa, Missouri, and other sections, where somewhat similar winter conditions prevail. On the grounds of the originator in Illinois it has borne a fair crop of fruit after experiencing a winter temperature of 18° F. below zero.

In the early years of its dissemination it was somewhat confused with an early, semicling, serrate-glanded variety originated by Eugene Gibson, of New Richmond, Mich., which was locally introduced by him in western Michigan and northern Ohio under the name "Champion," about 1887 or 1888. That variety was subject to mildew of the foliage and its fruit was of little value, but, having been rather largely propagated and disseminated (though without publication), it caused much disappointment among growers who fruited it, thus operating to the disadvantage of the Illinois variety when it was introduced.

DESCRIPTION.

Form round to roundish oblong; size medium to large; cavity large, deep, flaring; stem short; suture distinct from base to apex; apex small but rather prominent, extending beyond the outline of the fruit; surface smooth; color creamy white, washed and striped with red where exposed to the sun, and dulled by abundant, short, persistent down; skin thick; stone short, broad, oval, pale, of medium size, very free; flesh white, slightly stained with pink at the stone, thick, firm, melting, juicy, vinous; quality good to very good when well grown and thoroughly tree-ripened. Season medium, second half of August, in Montgomery County, Ill.

Tree vigorous, with rather light-colored bark; leaves of medium size, with serrulate margins and petioles of medium length, bearing small, reniform glands; blossoms small.

The specimens illustrated in Plate XLV were grown by Mr. John Dice, Cedar Rapids, Iowa.

EATON RASPBERRY.

[PLATE XLVI.]

The original bush of this very promising new raspberry appears to have been found by Mr. Ulysses Eaton at Cambridge City, Ind., as a chance seedling in his berry field in 1885. He propagated this

^a Horticultural Art Journal, December, 1889, p. 92.

and planted it for his local market. In 1898 accounts of the large size and fine quality of its fruit reached Mr. Amos Garretson, who visited the discoverer and, being impressed with the value of the variety, secured some plants of it from Mr. Eaton for testing at his home at Pendleton, Ind. These succeeded so well that in 1900 he purchased from Mr. Eaton the right to introduce the variety. Not being a nurseryman, he later arranged with Flansburgh & Pier-
son (later Flansburgh & Potter), of Leslie, Mich., to commercially introduce it, which they did in 1902.^a

Fruit of it was exhibited by Mr. Garretson at the Pan-American Exposition at Buffalo in 1901, where it was awarded a bronze medal, and at the Louisiana Purchase Exposition at St. Louis, Mo., in 1904, where Mr. Garretson made six successive shipments a week apart, two in June and four in July, to demonstrate its long ripening sea-
son. He states that he has had ripe berries of it as early as June 20 and fruit from the same hills August 10, indicating a length of season very desirable in a variety for home use and for some markets.

DESCRIPTION.

Roundish to roundish conical; large to very large, with a rather irregular undulating surface; drupelets broadly grooved and glossy; color clear, bright, durable crimson; pedicel slender, studded with prickles, receptacle of medium size, rather smooth, releasing the berry easily; calyx of medium size, pale; flesh red, translucent, tender, moderately solid, quite firm, but juicy; seeds relatively small; flavor mild subacid, with an agreeable aroma; quality good to very good for both dessert and culinary use. Season July 1 to August 10, in Madison County, Ind., lasting for several weeks.

The bush is described as of moderate vigor, with a distinct tendency to branch, but making fewer suckers than most other red varieties.

The hardiness and other desirable characteristics of this variety, as proved in Indiana and Michigan, render it promising for other northern districts.

The specimens illustrated on Plate XLVI were grown by Flans-
burgh & Potter, Leslie, Mich.

PETERS MANGO.

SYNONYM: *Peters No. 1.*

[PLATE XLVII.]

In addition to Mulgoba ^b and Sandersha ^c mangos previously de-
scribed in this series, another East Indian variety, the Peters, has

^a Letter of Amos Garretson, January 18, 1909.

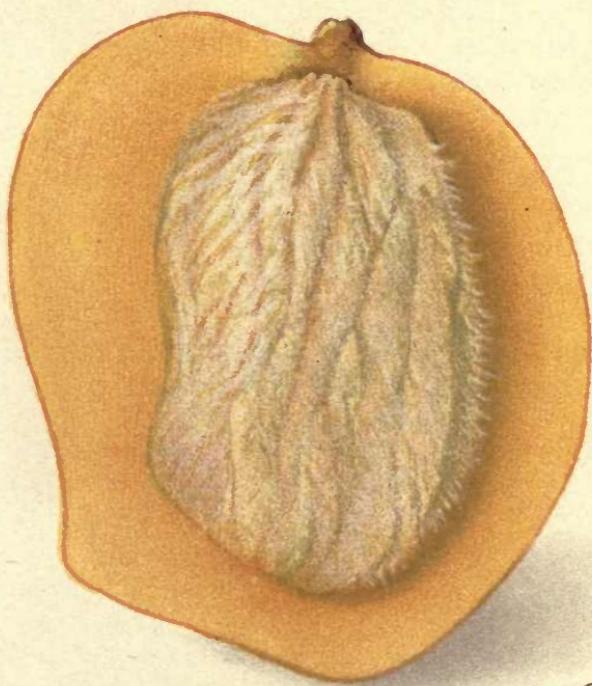
^b For description and illustration of Mulgoba see Yearbook 1901, p. 389, Plate LI.

^c For Sandersha see Yearbook 1907, p. 314, Plate XXXV.



E. J. Schutt.

EATON RASPBERRY.



A. A. Newton

PETERS MANGO.

shown sufficient merit during the past two years to warrant a more general testing.

This variety was obtained in 1899 by Messrs. Lathrop and Fairchild, at the Botanic Garden of Trinidad, British West Indies, in the form of five potted plants. These plants were distributed in 1900, under Seed and Plant Introduction No. 3706, with the following note:^a

Five potted plants of the Peters No. 1 mango, reputed by Mr. J. H. Hart to be the finest flavored of all the mangoes; green skinned, rosy purple blush, and mottled with small yellow dots. Skin thick, flesh pulpy, juicy, high-flavored. Ripens best in dry climate of Jamaica; good and regular cropper; tree medium size, healthy grower; weight of fruit, 12 to 16 ounces; size, 3½ by 3½ inches.

Mr. J. H. Hart, late superintendent of the botanical department of Trinidad, who has had the variety under observation in the West Indies for thirty-three years, states^b that it was introduced to both Jamaica and Trinidad about 1868 or 1869. Upon his arrival in Jamaica in 1875 he found it growing under the name "Bombay," but on arriving in Trinidad in 1887 he found trees of it growing there under the name "Peters."^c Trees standing side by side with the "Peters" bore the names "Peach" and "Malda," respectively, and closely resembled it in character of fruit, the "Peach" being distinguished from the others by being more highly colored on the sunny side. He considers the three sorts closely related, possibly seedlings from a common parent. From 1865 to 1887 these trees were propagated from by the dozens, but the demand is now so large that they are being grafted by thousands, both by the Government establishment and by private growers.

Mr. Hart states that, like other mangos, the Peters does well in the dry districts in the West Indies, but in damp, tropical locations the fruit is often subject to an unidentified disease which causes a darkening and souring of the flesh next to the seed just previous to ripening.

DESCRIPTION.

Form roundish oblong, heavily shouldered at base and plump at apex; size medium; stem rather stout, inserted in a small, shallow cavity; apex swollen, with a broad, strong beak an inch or more from the extremity of the fruit; surface moderately smooth, color greenish yellow, blushed, striped, and splashed with light and dark red; dots numerous, yellow; bloom bluish white; skin moderately thick, tenacious; seed small, oblong, thin, adhering tenaciously; flesh

^a Section of Seed and Plant Introduction Inventory No. 8, Jan. 1, 1901, p. 35.

^b Letters of January 23 and April 5, 1909.

^c Though suspiciously similar in name this is apparently not the "Peter" of the Calcutta Botanic Garden as described by Firminger in Manual of Gardening for Bengal and Upper India, London, 1864, p. 198.

thick, yellow, meaty, tender, and juicy, with but little fiber; flavor sweet, aromatic, rich; quality good to very good. Season July 15 to August 1 in Manatee County, Fla.

The tree is described as of broad, spreading habit.

While the variety has not yet been tested in Florida for a sufficient time to determine its relative adaptability to the mango-growing localities in that State, it is considered worthy of testing both for home use and market where other sorts or seedlings succeed.

The specimen illustrated on Plate XLVII was grown by Mr. J. T. Pettigrew, Manatee, Fla.

KAWAKAMI PERSIMMON.

[PLATE XLVIII.]

The larger size and brighter color of the Japanese persimmons have to some extent attracted the attention of southern fruit growers away from the hardier though less conspicuous native species. In recent years, however, a number of promising varieties of the more widely distributed of our native species, *Diospyros virginiana*, have been named and introduced. There has at the same time been a general recognition of the desirability of growing hybrids of these species in the hope of securing varieties harder than the Japanese and yielding larger and possibly less astringent fruits than the native parent. One such appears to have resulted from an accidental cross of the Yemon (synonym *Among*) on Josephine, on the grounds of Prof. T. V. Munson, of Denison, Tex., about 1893.^a Professor Munson grew a large number of seedlings of Josephine from seeds of a tree of that variety near which stood several trees of Yemon. From among these he selected a number that showed thicker and more pubescent twigs and larger leaves than their seed parent, resembling in these respects the Japanese species. Some of these showed much more strongly marked Japanese characteristics in tree and fruit than does this one, which he named Kawakami in 1902, but he preferred it to them because of its superior hardiness and vigor of growth as well as its marked retention of the distinctive flavor of the Josephine, which is considered superior to that of most of the Japanese varieties known in this country.

Professor Munson propagated the variety for dissemination about 1903, 1904. Its behavior thus far warrants the belief that it is considerably hardier than any of the Japanese varieties yet tested in this country and likely to succeed through a wide geographic range.

DESCRIPTION.

Form roundish oblate, sometimes quadrangular; size medium to large; cavity regular, of medium size and depth, with gradual slope,

^a Letters of T. V. Munson, October 12, 1908, and April 2, 1909.

covered with bloom; calyx small, segments reflexed; stem short, stout; apical point, short, stout; surface moderately smooth; color brownish yellow, covered with a bluish white bloom; skin thin, tender; seeds plump, broad, of medium size and number; flesh yellowish, translucent, with yellow veins, crisp, meaty, tender, moderately juicy; flavor sweet and rich, with but slight astringency; quality good to very good. Season medium to late, September 15 to November 1, in northern Texas. Tree more spreading and stocky than Josephine but less productive. It has thus far endured the winters as far north as Farmingdale, Ill., and is considered worthy of testing throughout the native persimmon belt.

The specimen illustrated on Plate XLVIII was grown by T. V. Munson & Son, Denison, Tex.

LONESTAR PERSIMMON.

[PLATE XLVIII.]

The Japanese persimmon (*Diospyros kaki*), which was recorded in America by Prince^a as early as 1828, though reintroduced by the Department of Agriculture in 1863, apparently did not attain a permanent foothold in the United States until about 1875, when it was introduced in the form of grafted trees both by the Department and by private parties. Numerous plantings have been made from time to time by growers in California and the Gulf States, with varying success both as to endurance and productiveness of trees and desirability and marketability of fruit. The early vernation and blossoming habit of this species, which starts into growth under the influence of short periods of warmth in winter and early spring, render it much more susceptible to injury by late spring frosts in the South than the widely distributed native persimmon (*Diospyros virginiana*). This sensitiveness to warmth in winter apparently constitutes the most important limiting factor of its cultural range.

Several of the well-known imported varieties are abundantly productive and yield fruit of such conspicuous size and brilliant color as to render them very attractive in the market. Most of these, however, retain their characteristic astringent flavor until the fruit is fully ripe, and, in fact, so soft as to be incapable of transportation or handling in commerce. This makes necessary the harvesting and shipment of the fruit while still hard, so that it reaches the market in an inedible condition, though attractive and tempting in appearance. The result is that notwithstanding the warnings to the purchaser against eating the fruit before it is soft, which are given by the growers and dealers, and which in some cases have even been

^aA Short Treatise on Horticulture, by William Prince, New York, 1828, p. 37.

printed upon the paper used in wrapping the fruits for shipment, a considerable proportion of consumers have been so disappointed in the quality of the fruit that they have tasted prematurely that the demand for Japanese persimmons in our markets has increased but slowly in recent years.

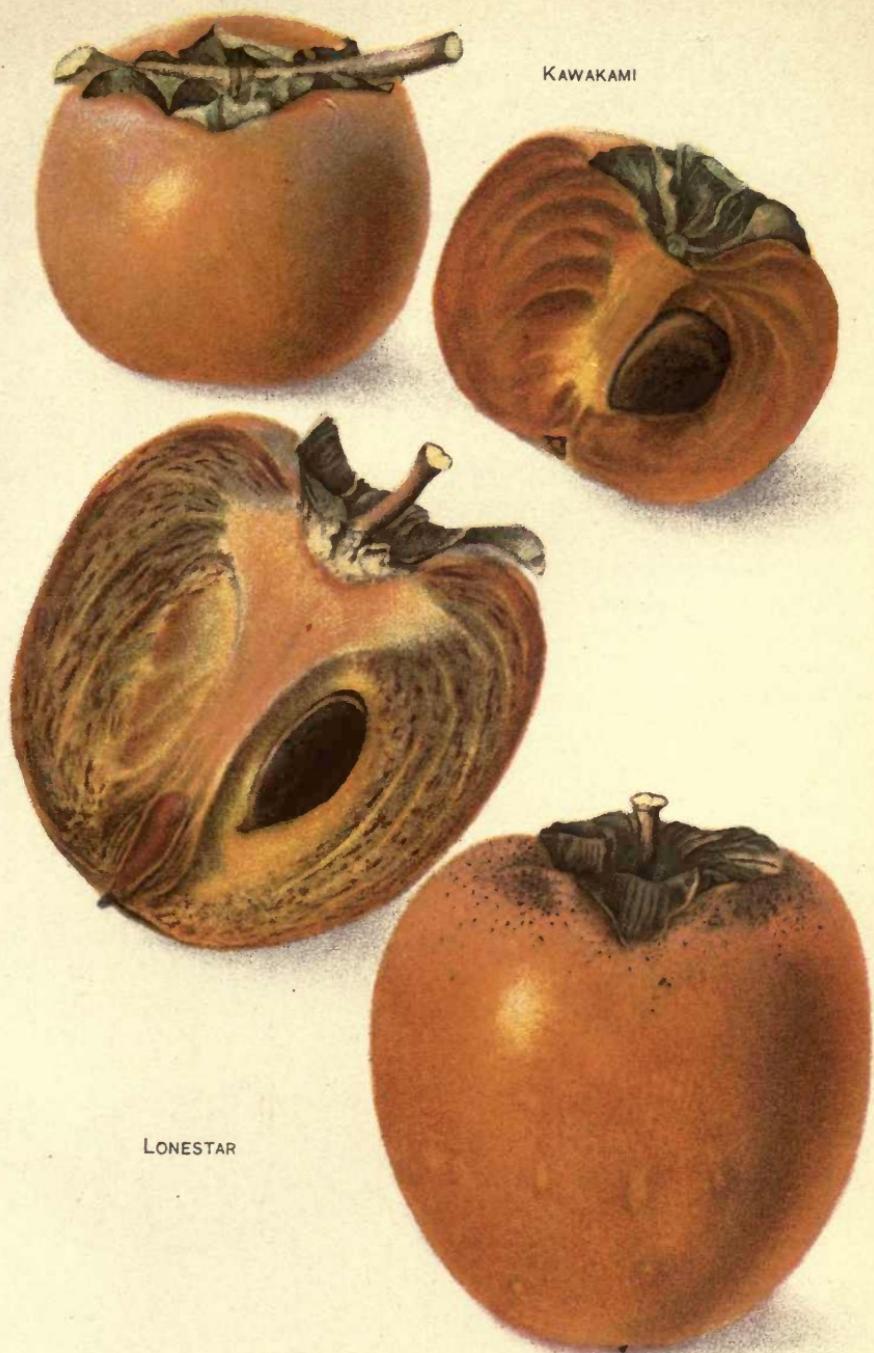
The Japanese appear to have overcome the difficulty to a large extent by subjecting the fruits to the fumes of saki in closed vessels for a time after they are picked. This has the effect of removing the astringence in advance of the softening of the fruit, and under the climatic and economic conditions prevailing in that country appears to afford a fairly satisfactory solution of the difficulty. Tests of this method now being made by the Bureaus of Chemistry and Plant Industry may eventually lead to its adoption in this country on a commercial scale.

Meanwhile there has come to light an interesting and promising variety of the Japanese persimmon, which ripens late, keeps long, and loses its astringence considerably in advance of the softening of the fruit. The variety was found by the late Mr. C. Falkner in his collection at Waco, Tex., several years ago. The tree found was of unknown history, and the exact source from which it was derived is unknown. Mr. Falkner was of the opinion, however, that it reached him among other Japanese fruit trees from Tyler, Tex., which had been forwarded from Japan by the late ex-Governor R. B. Hubbard, while United States minister to Japan [1885-1889].

As the varieties of the Japanese type previously known to Mr. Falkner were inedible until soft and the fruit of this tree remained hard and apparently unripe after the others had ripened, Mr. Falkner considered it of little value until he observed that birds were eating the fruit while it was still hard. On testing it he was surprised to find it palatable and free from astringence. Having confirmed the observation during several seasons, during which he endeavored to ascertain the identity and Japanese name of the variety, he propagated it in considerable numbers for a commercial orchard and introduced it under the name "Lonestar" in 1908, shortly before his death. It bears some resemblance to the Japanese illustration and description of "Shimo-Maru," published more than twenty years ago, but lacks certain of the most striking characteristics ascribed to that variety.

DESCRIPTION.

Form roundish to roundish oblong; size medium; cavity regular, rather large, flaring, furrowed, and somewhat leather cracked; calyx medium, four parted, adherent; stem moderately stout, curved; apex four grooved, with a small tip protruding slightly beyond the outline of the fruit; surface rather dull, undulating, and sparingly



KAWAKAMI

LONESTAR

PERSIMMONS.

Eleie E. Lower.



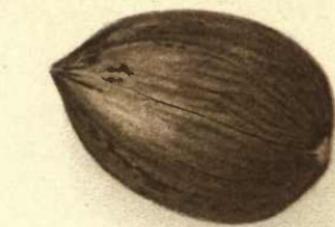
TAYLOR.



KENNEDY.



HODGE.



BOLTON.



CARMAN.

E. J. Schutt.

PECANS.

pitted; color dark orange-red, covered with bluish white bloom which persists in the pits; skin moderately thick and tenacious; seeds few, of medium size, plump, brown; flesh orange-red, abundantly flecked with purple, giving it a brownish effect in many specimens; texture crisp and meaty; flavor sweet, rich, entirely without astringence after the skin reddens; quality very good. Season August to October in McLennan County, Tex.

The specimens illustrated on Plate XLVIII were grown by the late Mr. C. Falkner, at Waco, Tex.

The relative hardiness of the variety yet remains to be determined, as it has not been fruited elsewhere than at Waco. It is considered worthy of trial throughout the territory where other varieties of the Japanese species succeed.

PECANS.

[PLATE XLIX.]

The planting of extensive commercial orchards of this valuable nut in the Southern States continues, and interest in the species as a roadside and dooryard tree through a much wider geographical range has become active. While the importance of securing varieties adapted to local conditions is much less in such cases than where a commercial investment depends upon it, planters of even a few trees should endeavor to secure varieties that are known to have succeeded under conditions similar to those under which they are to be planted. This is especially important where the planting is made in a different climatic region from that in which the varieties originated.

The earlier plantings of budded and grafted trees of ten or twelve of the leading varieties are now gradually coming into bearing in widely separated localities throughout the South, so that a fairly definite appraisal of the value of these sorts for many sections should soon be possible. Meanwhile the behavior and characteristics of the thousands of seedlings of these choice varieties that are annually coming into bearing should be closely observed, with a view to locating still more promising varieties that may reasonably be expected to appear among them.

TAYLOR PECAN.

The original tree of this variety is supposed to have been grown from a nut planted by the brother of the present owner, Miss Lulu Taylor, of Handsboro, Miss., about 1885. The exact source from which the seed came is not known, but it is supposed to have been from some tree in that neighborhood. The tree began bearing when 12 years old and has borne regularly since that time, the crop for several years past having averaged about 125 pounds. The variety was first propagated by W. F. Heikes, of Huntsville, Ala., at his Biloxi,

Miss., nursery, about 1901, and, having been named in honor of its owner, was introduced by him in 1902. Nuts of it were examined and passed upon by the committee of nomenclature and standards of the National Nut Growers' Association at Scranton, Miss., in November, 1906, at which time it received a grade of 86.06 out of a possible 100.

The original tree of the Taylor is now about 60 feet tall,^a with a spread of 45 to 50 feet, and a trunk diameter of about 18 inches. The bark of the trunk and larger branches is scaly, loosening in long strips. The tree is pyramidal in form, with slender wood of rather light color, with slender buds, and long, narrow dots. The leaves are long, with 11 to 13 thin and tapering leaflets. The fruit spurs are quite evenly distributed throughout the tree, and bear from 3 to 5 nuts each.

DESCRIPTION.

Form long, rather slender, constricted near middle, slightly curved, with pointed base and long, sharp apex; color bright yellowish brown, with few and narrow black markings irregularly placed; size rather large, 60 to 65 per pound; shell thin, with thin and soft partitions, cracking very easily; kernel long, slender, rather deeply grooved, but plump, smooth, and releasing the shell easily; color bright yellowish; texture very fine grained and crisp; flavor sweet, nutty, free from astringence; quality very good.

Though not yet fruited, so far as known, outside of the locality of its origin in southern Mississippi, its numerous desirable qualities indicate that it is worthy of testing where other Gulf coast varieties succeed.

The specimens illustrated on Plate XLIX were grown on the original tree at Handsboro, Miss.

KENNEDY PECAN.

The Kennedy pecan originated as a seedling grown by Dr. J. B. Curtis, Orange Heights, Fla., in 1886, from nuts of Turkey Egg obtained by him from the late Arthur Brown, of Bagdad, Fla. It was one of the same lot of seedlings as the Curtis,^b and has had much the same history as that variety. It began bearing about 1893, and was first propagated by Doctor Curtis, who top-grafted 6 trees with it about 1898 or 1899, which averaged 50 pounds of nuts per tree in 1908. Doctor Curtis named it Kennedy, in 1900, under which name it was described by Hume in that year.^c

^a Tree description furnished by Mr. C. A. Reed, special agent.

^b For history, description, and illustration of Curtis, see Yearbook, 1906, p. 368, Plate XXXII.

^c Florida Agricultural Experiment Station Bulletin 54, August, 1900.

DESCRIPTION.

Form long, ovate conical, with a bluntly pointed base and sharp, prominent apex, sometimes sharply curved; size medium, 60 to 65 nuts per pound; surface smooth; color bright golden brown, with a few irregular purplish stripes toward apex; shell medium in thickness, rather hard, but with thin and brittle partitions; cracking quality good; kernel very plump, thick, with rather narrow but shallow grooves; texture moderately fine and solid; flavor sweet; quality good.

The tree is rather round topped, low headed, symmetrical, and spreading. The young wood is of medium caliber, dull gray, with short, acute buds, and numerous long, narrow, light gray dots. Like the Curtis it is leafy, with the fruit spurs well distributed through the tree. The nuts are borne in clusters of two to four each, and ripen in Alachua County, Fla., October 15 to 20. The variety is recommended for middle and northern Florida, and it is worthy of testing wherever the Curtis succeeds.

The specimens illustrated on Plate XLIX were grown by Dr. J. B. Curtis, Orange Heights, Fla.

HODGE PECAN.

While the northern limit of natural distribution of the pecan is in the vicinity of Davenport, Iowa, in the Valley of the Mississippi River, and of Terre Haute, Ind., in the Wabash Valley, very few of the wild pecan trees now surviving north of the Ohio River yield nuts of sufficiently large size, thin shell, and plump kernel to justify their perpetuation by budding or grafting. The inability of most, if not all, of the far southern varieties to endure the low winter temperatures that occasionally occur in the northern portions of the pecan region renders them of little prospective value to northern growers. There is much interest, therefore, in the search for desirable varieties likely to prove hardy in the Middle Western and Middle Atlantic States.

One of the most promising sorts of this character thus far brought to notice is the Hodge, the original tree of which is owned by Mr. H. G. Hodge, of York, Clark County, Ill. He reports it to be a wild tree, about 10 inches in diameter and 40 feet high in 1908,^a and as yielding about 1 bushel of nuts in that season. He has had the tree under observation for several years, having sent specimens of the nuts from it to the Department in various seasons since 1893. He has disseminated it in the form of nuts for planting under the names "Hodge's Favorite" and "Illinois Mammoth," neither of which, however, appears to have been published.

^a Letters from H. G. Hodge, November 18 and 25, 1908.

DESCRIPTION.

Form oblong, obovate, compressed, tapering to a very prominent point at base, with a square-shouldered, quadrangular, sharp-pointed apex; surface rather lumpy and somewhat irregular; size variable, ranging from 60 to 100 per pound; color dull grayish brown, with numerous broad and long black stripes from apex to middle of nut; shell quite thick and hard but brittle, with thin and brittle partitions, cracking fairly well; kernel oblong, tapering, rather deeply grooved, but releasing the shell rather easily; color rather bright yellowish brown; texture moderately fine grained; flavor sweet, nutty; quality good.

This variety, which has not been previously published, is the largest one of northern origin yet brought to notice and is considered worthy of testing by those who desire to grow pecans near or above the northern limit of natural distribution of this species.

The specimens illustrated on Plate XLIX were from the original tree owned by Mr. H. G. Hodge, York, Ill.

BOLTON PECAN.

The original Bolton pecan tree appears to have been grown about 1888 from nuts obtained from an unnamed old tree on the Bolton plantation, about 7 miles^a south of Monticello, Fla. The old plantation tree bore nuts of superior quality, which were largely planted throughout that section during the period which antedated the era of pecan budding and grafting. Out of the many seedlings thus grown from it in the vicinity of Monticello, one of six^b in the garden of Judge T. M. Puleston, of that place, which he had secured from Mrs. E. Footman, of Monticello, began bearing at the age of 8 years. This soon thereafter attracted the attention of the late J. H. Girardeau, who named it "Bolton" and began propagating from it about 1899, in which year it was catalogued by him. Mr. Girardeau propagated from the old plantation tree and one or two other varieties largely for several years, having sold 10,000 grafted trees prior to 1904.^c He exhibited the Bolton with others at the Charleston Exposition in 1902, and was awarded a gold medal thereon.

As scions taken from the old unnamed seedling tree on the Bolton plantation and young trees propagated therefrom appear to have been disseminated under the name "Bolton" during the earlier years of dissemination of the variety, it is strongly probable that two different

^a Letter of Judge T. M. Puleston, January 26, 1909.

^b Hume, in Florida Agricultural Experiment Station Bulletin 85, March, 1906, p. 496.

^c Letters of J. H. Girardeau, sr., January 9, 1904, and J. H. Girardeau, jr., April 3 and 5, 1909.

varieties will be found under this name when the plantings already made come into bearing. So far as known, all the nursery-grown trees disseminated under the name "Bolton" during the past ten years trace to the Puleston tree, and this is considered the true Bolton.

DESCRIPTION.

Form short, broad, roundish oval, with broad, smooth base and blunt, quadrangular apex; size uniform, medium, 60 to 65 per pound; color grayish brown, with numerous black stripes toward apex; shell thick, with thick but soft partitions, cracking quite easily; kernel broad, plump, smooth, with broad, shallow grooves, brownish yellow, somewhat convoluted; texture rather soft, but fine grained; flavor sweet, nutty; quality good to very good.

Wood rather stout, straight, greenish to light gray, with inconspicuous dots and slender, rather blunt buds.

The largest crop yet harvested from the original tree was 50 pounds, but as it has been heavily cut for scions that is not considered a fair indication of the productiveness of the variety at its present age of 20 years.

Though apparently not as productive as some other varieties, this sort seems well adapted to the conditions of northern Florida and southern Georgia, where it is now in bearing.

The specimens illustrated on Plate XLIX were grown by Judge T. M. Puleston, Monticello, Fla.

CARMAN PECAN.

The original tree of the Carman pecan stands in the seedling orchard of Mr. S. H. James, Mound, La., which was grown from nuts planted by him in 1884.^a It, with many others, was grown from nuts purchased by Mr. James at a fancy-fruit store in New Orleans, the exact source from which these nuts were obtained being unknown at the present time. The orchard in which the original tree stands is planted 30 by 60 feet, a distance entirely too close for rich alluvial soils such as it is located on, so that the development of the original Carman has been somewhat restricted by the crowding of adjacent trees. It began bearing at the age of 9 years from the seed and, next to "Moneymaker," which originated in the same orchard, Mr. James reports it as the most promising sort yet tested at his place.

Mr. James at first considered the Carman tree insufficiently vigorous for commercial planting, but, having increased his stock of the variety to 20 trees in his own orchard, beginning about 1897, he concludes that it is more vigorous than a number of other sorts, such as "Georgia," "Russell," and "Halbert," at his place.

^a Letter of S. H. James, January 22, 1909.

Mr. James named the variety "Carman" in 1898,^a in honor of the late E. S. Carman, editor of the *Rural New Yorker*, and has sparingly propagated and disseminated the variety since that time.

DESCRIPTION.

Form very long, slender, and cylindrical, with rather smooth base and prominent quadrangular apex, sometimes distinctly curved; surface generally smooth, though distinctly ridged in some specimens; size large, 55 to 60 nuts per pound; color bright brownish, with few and narrow purplish stripes toward apex; shell medium in thickness but soft, with very soft partitions, cracking easily; kernel very long, slender, and smooth, not always filled at tips, but very smooth and attractive when plump; color bright golden; texture moderately fine grained and firm; flavor sweet, rich; quality good to very good. This is a dessert pecan for cracking at table, rather than for commercial crackers or the confectioner.

Tree a fairly strong grower; young wood rather stout, light grayish green, with rather numerous, inconspicuous, light brown dots. Buds, small, long, pointed.

No exact record of yield of the tree has been kept, but the original tree is considered fairly productive, the crop ripening about October 10. It is suggested for trial in the lower Mississippi Valley.

The specimens illustrated on Plate XLIX were grown by Mr. S. H. James, Mound, La.

^a S. H. James, in *Rural New Yorker*, January 8, 1898, p. 19.

M. Chittenden

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AB.

Y. B. Separate 521.

PROMISING NEW FRUITS.

By

WILLIAM A. TAYLOR,

*Pomologist in Charge of Field Investigations,
Bureau of Plant Industry.*

[FROM YEARBOOK OF DEPARTMENT OF AGRICULTURE FOR 1909.]

ПЕРВАЯ ЧАСТЬ ОБРАЗОВАНИЯ

Изучение языка

и культуры языка в контексте образования

и воспитания

и социокультурного и профессионального развития

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PROMISING NEW FRUITS.

By WILLIAM A. TAYLOR,

Pomologist in Charge of Field Investigations, Bureau of Plant Industry.

Interest in new fruits varies greatly in different sections and at different times in the same section. Where the commercial production of certain types has become firmly established such interest usually lags so long as the established types continue to do well and to meet with good demand in the markets. When such sorts suffer from unusual or untimely climatic conditions or prove susceptible to injury by diseases or insects not previously encountered, however, interest is at once aroused and the need for varieties superior in one or another important characteristic is at once realized. In such case the community which has within its borders a fruiting collection containing the newer sorts is fortunate through its ability to gain quickly the desired information regarding the adaptability of such sorts.

Every large commercial orchard enterprise should in fact maintain a carefully selected varietal collection merely for the information to be derived regarding the behavior of varieties, against the possibility of needing to top-work blocks of some of the older sorts. For notwithstanding the importance of cultural methods, including spraying, and of skill in handling and marketing the product, the fact remains conspicuously evident that the inherent characteristics of varieties and their proper adjustment to environment are factors of fundamental importance in successful orcharding.

The "newness" of varieties is, in a country like the United States, at best but a relative term. Sorts thoroughly tested and proved either successes or failures in one section are still unknown in other parts. Hardly a season passes without bringing to light some old eastern variety that has found a congenial home farther west or south than its previously proved region of adaptability. Some such sorts have accordingly been included in the series of articles on this subject which began in the Yearbook for 1901, in order that the attention of fruit growers may be called to such of them as are worthy of testing in an experimental way. The commercial fruit grower should of course bear in mind that these are not recommended for extensive planting outside of the localities where they have already proved their adaptability, but that they are suggested as promising for trial. With most of the tree fruits several fruiting seasons are required to determine whether a new sort is worthy of commercial planting in a locality.

MOTHER APPLE.

SYNONYMS: *American Mother*, *Gardner's Apple*, *Queen Anne*.

[PLATE XXX.]

This choice early winter apple, though hardly entitled to designation as a new sort, is being found adapted to a much wider climatic range than has previously been thought possible.

The exact time of its origin is not known, but it appears to have originated on the farm of Gen. Stephen P. Gardner, of Bolton, Mass., rather early in the last century. The first public notice that it received appears to have been in 1844, when Hovey reported it as having been exhibited before the Massachusetts Horticultural Society the preceding autumn.^a

At the North American Pomological Convention held in Buffalo in September, 1848, it was decided to be of "first-rate character," and a description and outline of the variety were published in the account of that meeting for that year.^b The first adequate description and outline of the variety were published by Hovey^c in 1849. With five other varieties it was listed by the American Pomological Society in 1852 in a group of "New Varieties which Promise Well," and it appears to have quickly attained high reputation as a dessert apple. The small size of tree, earliness of ripening season, and the relative susceptibility of the fruit to apple scab appear to have held it out of the market lists until recently.

DESCRIPTION.

Form roundish oblong to oblong conic, indistinctly ribbed; size large; cavity regular, small to medium in size, moderately deep, with gradual slope and russet markings; stem short, moderately stout; calyx segments small, converging; eye small, closed; surface moderately smooth, rather dull, rarely glossy; color rich yellow, washed with mixed red and striped with crimson; dots numerous, small to medium in size, brown and yellow; skin moderately thick; core rather large, roundish, clasping, open; calyx tube rather deep, varying from funnel shaped to cylindrical; seeds small, plump, brown, numerous; flesh yellowish, fine grained, crisp, and juicy; flavor mild but distinctly subacid and rich, with a characteristic aroma which distinguishes it from other sorts; quality very good. Season, November to January in the northern winter apple regions, but becoming a late fall apple farther south.

Like some other sorts that have long been known and somewhat planted in the northern winter apple districts chiefly as home orchard

^a Magazine of Horticulture, 1844, p. 210.

^b Transactions of the N. Y. State Agricultural Society for 1848, p. 281.

^c Magazine of Horticulture, January, 1849, p. 65.

varieties of high quality, the Mother in recent years is attracting attention as a commercial sort.

The tree is but a moderately vigorous grower and does best on more vigorous stocks. Its behavior farther south (as recently observed) indicates an adaptability to Appalachian conditions not previously recognized, so that it appears worthy of testing in all districts where varieties like Baldwin and Esopus succeed, to which it is evidently rather closely related.

Its behavior under modern cultural methods indicates its adaptability to conditions as widely different as those of New England, eastern New York, North Carolina, western Michigan, and portions of Washington. When planted commercially the fruit would undoubtedly need to be handled in special trade.

The specimen illustrated in Plate XXX was grown by Mr. J. W. Van Deman, Benzonia, Mich.

COFFMAN APPLE.

SYNONYMS: *Koffman June*, *Summer Red*.

[PLATE XXXI.]

This very promising early apple has long been grown in western Tennessee, where it was propagated by "sprouts" from an old tree on the farm of Mr. W. L. Coffman, in Lauderdale County, as early as 1855.^a Though apparently not much propagated in nurseries of that section it appears to have been considerably distributed throughout western Tennessee, northern Alabama, and to some extent in Arkansas before its formal introduction to the nursery trade by Mr. B. A. Craddock about 1888. Its close resemblance to Red June (synonym, *Carolina Red June*) gives ground for the belief that it is a seedling of that well-known old sort. It was described without illustration by Heiges in 1895^b and the evidence of its wide range of adaptability to southern conditions accumulated since that time indicates that it is at the present time one of the most promising early varieties for both home use and market in the South.

DESCRIPTION.

Form oblong to oblong conic, often slightly oblique and tapering toward base; size medium to large; cavity small to medium, deep, abrupt, marked with russet; stem very short, rather stout; basin of medium size, regular, deep, abrupt, marked with shallow furrows and somewhat downy; calyx segments long, narrow, converging, reflexed at tip; eye small, closed; surface smooth, glossy; color pale

^a Letter from Mr. B. A. Craddock, Curve, Tenn., 1895.

^b Report of Pomologist for 1895, p. 21.

yellow, washed over practically the entire surface with mixed red, striped with dark purplish red, and thinly overspread with gray; dots numerous, small, gray and yellow; skin rather thick and tough, tenacious; core small, conical, very open, meeting the eye; calyx tube long, large; seeds of medium size, plump, brown, rather numerous; flesh yellowish, tinged with red, rather fine grained, breaking and rather juicy; flavor sprightly subacid; quality good to very good. Season, June and July, in Hardman County, Tenn.

The tree is a vigorous and upright grower, with reddish-brown bark on the young wood. It is reported to be abundantly and regularly productive, the original tree not having missed a crop in thirty years.

The reviving interest in summer apples for commercial planting renders this variety of the Red June group well worthy of the attention of planters south of the Ohio and Potomac rivers. It appears to possess all the merits of the Red June coupled with larger size and better carrying quality.

The specimen illustrated in Plate XXXI was grown by Mr. J. M. Morris, Grand Junction, Tenn.

DIPLOMA CurrANT.

SYNONYM: *Moore's No. 180.*

[PLATE XXXII.]

This promising sort was grown in 1885 by the late Jacob Moore, of Brighton, N. Y., as a seedling of the Cherry currant, the blossoms of which had been fertilized with pollen of the White Grape currant during the previous season. Fruit of it was submitted in 1896 by Mr. Moore to the Department for examination under its provisional designation "No. 180," and in 1897 Mr. Moore named it Diploma. It was formally introduced to cultivation in 1906 by Mr. Charles A. Green, of Rochester, N. Y.

The originator, who grew a large number of seedling currants, considered it his largest fruited variety, averaging larger in size than its parent the Cherry and outyielding that variety under the same conditions and treatment, while at the same time milder in acid and of better quality than that sort.

DESCRIPTION.

Racemes short to medium in length and rather slender, carrying from 5 to 8 berries each; berries globular, large to very large, on pedicels of moderate length, to which they adhere rather tenaciously; corolla brown, small, tenacious; surface smooth, glossy; color bright, rich, crimson, not fading quickly after picking, with narrow yellow veins and showing the seeds through the translucent flesh and skin; seeds rather large, numerous, and rather woody; flesh reddish,

translucent, moderately firm but tender, abundantly juicy but of fair shipping quality; flavor sprightly subacid; quality good to very good. Season, the second half of July, at Rochester, N. Y.

Wood and foliage similar to Cherry, but more vigorous than that variety.

A promising sort for both the home garden and the market plantation.

The specimen illustrated in Plate XXXII was grown by Green's Nursery Company, Rochester, N. Y.

CARRIE GOOSEBERRY.

[PLATE XXXIII.]

While the gooseberry has not yet attained the standing as a home garden or market fruit in the United States that is accorded to it in some of the European countries, especially the United Kingdom, there are few fruit gardens in the Northern States where it is unrepresented, while in some sections it has become an important market fruit. The failure of the highly developed European varieties to endure our more intense and variable climatic conditions is doubtless the explanation of the general lack of interest among American growers, which is indicated by the very small number of American varieties that have appeared thus far. Hardly more than a half dozen such sorts, including Houghton, which originated in 1833, and Downing, about 1854,^a have as yet established their value as desirable sorts. A few of the European sorts when given special care and attention have been found fairly successful, one of the most conspicuous of these being Industry, which was introduced into the United States by Ellwanger & Barry about 1883. Seedlings are still being grown, however, and some systematic breeding work is being done that promises to yield varieties better adapted to the conditions prevailing in particular districts than any yet disseminated, both as regards disease resistance, cold endurance, and productiveness. One of the most promising of those recently disseminated is the Carrie, which originated as a seedling of Houghton, grown by Mr. Wyman Elliot, of Minneapolis, Minn., in 1893. It was one of some 700 seedlings that resulted from a supposed cross of Industry, of which one bush stood adjacent to the mother Houghton bush. In the spring of 1894 the seedlings were removed to the farm of Mr. Thomas Redpath, near Lake Minnetonka, where one bush was soon discovered to be superior to all the others in several important particulars. This, which was the original Carrie, bore some fruit the first year after transplanting, and at 4 years of age produced 8 quarts of berries. Having good foliage and being of vigorous growth, and having maintained regular productiveness without showing any winter injury, its commercial

^a Magazine of Horticulture, 1857, p. 516.

introduction was decided on in 1903, and its propagation by layers and cuttings was begun in that year. The variety was named Carrie in honor of Mrs. Redpath, and was introduced in 1905 by Elliot and Redpath.

DESCRIPTION.

Berries borne singly or in pairs or triplets with occasionally 5 in a cluster; size medium, though sometimes large; form roundish oval with an unusually long, meaty shank at the base; pedicel very slender, rather tenacious; corolla rather small, adherent; surface smooth, glaucous; color greenish, changing to purplish red on the exposed side, and conspicuously veined with white; flesh greenish, translucent, rather firm, fine grained, pulpy, juicy; flavor a pleasant sub-acid; quality good to very good. Wood long, rather slender, willowy; very productive; foliage large, thick, glossy, free from disease.

Recommended for the upper Mississippi Valley and other sections having severe winters and hot summers.

The specimens illustrated in Plate XXXIII were grown by Elliot and Redpath, Minneapolis, Minn.

WINFIELD RASPBERRY.

[PLATE XXXIV.]

The original plant of this promising blackcap was found in June, 1902, as an accidental seedling in a grape arbor in the garden of Mr. G. F. Kleinstieber, in Winfield, Kans. Mr. Kleinstieber was strongly inclined to destroy the stray seedling as a weed, but his wife induced him to retain it until after it should fruit. The plant proved a vigorous grower and matured a strong cane which grew out through the side of the arbor and, true to the habit of its species, struck root at its tip in the soil outside. The handsome color, large size, and fine quality of the crop when it fruited encouraged Mr. Kleinstieber to propagate it for his own planting and it soon attracted the attention of others, with the result that the Winfield Nursery Company introduced the variety in 1909.

Nine plants of it in the garden of Mr. Kleinstieber yielded 54 quarts of berries in one season when the crop of Kansas raspberry beside it was destroyed by frost, while in 1908 he sold \$40 worth of fruit from a plot 32 by 95 feet in his garden at an average price of \$3.50 per crate of 24 boxes in addition to 60 boxes of fruit used at home.^a

DESCRIPTION.

Berries roundish oblate, large to very large, borne in a compact cluster of from 10 to 16 fruits, sometimes having 1 or 2 isolated lower

^a Information furnished by Mr. Kleinstieber, July, 1909, through Mr. H. P. Gould, Pomologist in Charge of Fruit District Investigations.

berries; drupes large, fleshy, glossy, black, with heavy bloom, adhering rather closely to the receptacle; seeds small; pedicels slender, thorny; calyx of medium size; flesh dark purplish red or black, firm and meaty but juicy and tender; flavor subacid with pleasant aroma; quality good to very good. Season, early June in Cowley County, Kans.

The bush is a strong, vigorous grower, apparently hardy and worthy of planting wherever the blackcaps succeed, especially in the prairie region, where many of the eastern varieties fail.

The specimen illustrated in Plate XXXIV was grown by the Winfield Nursery Company, Winfield, Kans.

VICTOR ROSELLE.

[PLATE XXXV.]

The roselle, *Hibiscus sabdariffa* Linn., though native to the Old World Tropics, has long been sparingly introduced to the West Indies and elsewhere in tropical America. It was reported in Jamaica as early as 1707^a by Hans Sloane, who stated that it was planted in most gardens of that island, where "The capsular leaves are made use of for making Tarts, Gellies, and Wine, to be used in fevers and hot distempers, to allay heat and quench thirst." In Florida, where the date of its introduction, though unrecorded, is evidently recent, it is very commonly known as "Jamaica Sorrel," and in parts of tropical America, notably the Canal Zone, it bears this name, indicating the Jamaican channel through which the species was probably distributed in the New World. Notwithstanding its long recognition as a valuable plant in both the Old and the New Worlds, little attention appears to have been paid to the development of improved strains until recently. In fact, so far as known the Victor is the first variety or race to be dignified with a varietal name. This is probably due to the fact that in India, as has been stated by Wester,^b the species, though recognized as possessing edible qualities, has chiefly been grown as a fiber plant rather than for its edible calyces, the portion prized in the American Tropics. As the plant is a tropical annual requiring at least six months of warm weather free from frost to bring it up to the beginning of its harvest period and about two months more to mature its full crop, its chief interest to American planters will be in southern Florida and frost-free localities in California, together with Porto Rico, the Canal Zone, Hawaii, and the Philippines. Its luxuriant growth and great productiveness may render it sufficiently profitable in some sections where frost occurs too early to permit its seed to ripen, however. It appears not improbable that earlier

^a Natural History of Jamaica, 1707, vol. 1, p. 224.

^b Farmers' Bulletin 307, p. 9.

maturing varieties may yet be developed which may be adapted to a considerable portion of the cotton States.

The Victor was originated at Miami, Fla., by Mr. P. J. Wester, Special Agent in the Bureau of Plant Industry. Having obtained a few plants of the common roselle in 1904 from Mr. W. A. H. Hobbs, of Cocoanut Grove, for planting in the Subtropical Garden at Miami, Mr. Wester observed marked variation among them and began selecting seed from those bearing the largest calyces and showing other desirable characteristics, with the result that in the second generation of plants (1906) the strain was considered fixed and has so continued.

DESCRIPTION.

Mr. Wester's characterization of the Victor is as follows:^a

"The plants of the Victor variety are inclined to be a trifle more dwarf than the common kind, but the foliage is similar. The measurements of the calyx of the common variety are: Length 33 mm., diameter 22 mm.; in the improved type the measurements are 49 mm. and 28 mm., respectively. The increase in size is thus seen to be rather more in length than in diameter. Calyces of the improved type have in some instances been 60 mm. long and 38 mm. in diameter. The improved type is also distinct in being more strongly ribbed longitudinally and in having the calyx not so closely appressed to the seed pod as in the common variety. It is frequently inclined to be convolute at the apex."

As a tropical plant yielding a quick return in the form of a sauce, jam, and jelly producing fruit, closely resembling in quality the cranberry of the North, the Victor is worthy of testing wherever the common roselle has been found to succeed. To obtain the highest yield of large calyces, the seeds are planted in southern Florida about May 15. The young seedlings are transplanted to the field when 3 or 4 inches high, and begin blossoming late in October. The first fruit is gathered about the middle of November and should be harvested as rapidly as it reaches suitable size in order to insure continuance of blossoming and fruiting until late in February.^b

The specimens illustrated in Plate XXXV were grown at the Subtropical Garden at Miami, Fla.

PECAN VARIETIES.

[PLATE XXXVI.]

The numerous pecan orchards that are now attaining bearing age in the Southern States emphasize the fact that it is of the utmost importance that commercial planters of this nut should exercise

^a Farmers' Bulletin 307, p. 10.

^b Full details regarding the culture, yield, uses, and other important points of roselle will be found in Farmers' Bulletin 307.

great care to secure varieties adapted to the conditions of the section where they are to be planted. While trees of varieties that prove unsuited to conditions can be top-worked and converted into other sorts, the expense of such conversion and the time required to accomplish it render it important that the necessity for such top budding and grafting be avoided if possible. Careful investigation of the behavior of varieties already growing in a locality or under conditions as similar as can be found is the only safe course for the pecan planter in selecting his varieties. While nothing short of actual test of a variety in the locality can be considered sufficient, in the absence of such test the grower will do well to confine his commercial plantings to varieties that have originated in his own region, rather than to rely on sorts that have been developed under radically different climatic conditions.

BRADLEY PECAN.

The original tree of this variety was grown from a Frotscher pecan planted about 1886 at Macclenny, Fla., by Mr. D. C. Griffing. It bore its first nuts in 1892, and its precocity and productiveness, coupled with its early ripening season, caused its owners to begin the propagation of it about 1896. It was catalogued and introduced in 1898 by the Griffing Brothers Company. The original tree has been heavily cut for scions, so that no very accurate determination of its productiveness has been possible, but it is reported to have borne well and regularly up to 1907, when it yielded nearly 200 pounds of nuts. Since then the crop has been light.

DESCRIPTION.

Form long, oval to cylindrical, somewhat compressed, with a rather long, pointed base and long, angular apex; surface smooth; size medium, 65 to 80 nuts to the pound; color bright grayish brown with dark reddish black markings near apex; shell thin, rather hard, cracking easily and releasing kernel readily; kernel brownish, plump, considerably corrugated and broadly grooved; texture firm, compact; flavor sweet; quality very good. Season early.

The tree resembles its parent, the Frotscher, considerably, is a vigorous grower, of erratic, spreading habit, with narrow, thin foliage and carrying its fruit spurs well through the tree. The young wood is smooth and brown, with numerous large, light dots.

Under favorable conditions the young trees are very vigorous and productive, some in Thomasville, Ga., about 7 years old having been observed in 1909 breaking down with their load of nuts.^a

The specimens illustrated in Plate XXXVI were grown by Mr. R. S. Heeth, Thomasville, Ga.

^a Reported by Mr. C. A. Reed, Special Agent, September, 1909.

CLAREMONT PECAN.

The original tree of this variety is a seedling about thirty years old on Pecania (formerly Claremont) Plantation near Ferriday, Concordia Parish, La. The tree, which is isolated from others of its species, began bearing about 1895 and has borne regularly and heavily each year since. The crop of 1908 totaled nearly 450 pounds. That of 1909 was considerably lessened by a severe storm in September, but amounted to about 350 pounds. The variety was named Claremont in 1907 by Prof. H. E. Van Deman when its propagation was begun.

DESCRIPTION.

Form roundish ovate, with flattened base and short, blunt apex; size medium, 55 to 75 nuts to the pound; color dull grayish brown with numerous purplish markings toward apex and scattered flecks over general surface; shell moderately thick and rather hard, but cracking easily and releasing kernel exceptionally well; kernel plump, slightly corrugated and broadly grooved, of a pale yellowish color; texture compact; flavor sweet; quality good to very good. Season medium.

The tree is a strong, symmetrical, upright grower with fruit spurs well distributed, bearing clusters of from 1 to 8 nuts, usually 3 or 4. The young wood is smooth and brown, with stubby, hairy buds. Though not yet fruited except on the original tree, the variety is apparently promising for the lower Mississippi Valley.

The specimens illustrated in Plate XXXVI are from the original tree on Pecania Plantation at Ferriday, La.

HALBERT PECAN.

The Halbert pecan was discovered as a wild tree in a grove near Coleman, Tex., by Mr. H. A. Halbert in 1886. Shortly after this Mr. Halbert took possession of the land on which the tree stood and began disseminating the variety in the form of nuts. It was named Halbert by him about 1901,^a and on December 10 of that year^b was awarded the first premium in a pecan competition at Waco, Tex., for the best pound of pecans exhibited.

The first propagation of the variety by budding was by Mr. Halbert in 1901.

DESCRIPTION.

Form short, roundish oval, compressed, with blunt base and very short, blunt, quadrangular apex; size medium, 65 to 70 nuts to the pound; color rather dull reddish brown with reddish black markings; shell very thin and rather brittle; cracking quality excellent, releas-

^a Letter from Mr. H. A. Halbert, January 29, 1902.

^b Texas Farm and Ranch, December 28, 1901, p. 13.

ing the kernel easily and completely; kernel bright, very plump, deeply grooved; texture firm, oily; flavor sweet; quality very good.

The tree is described as of willowy growth, with slender, long-jointed wood. It is reported to be a very heavy bloomer, with fruiting clusters of 3 to 5 nuts, with sometimes as many as 8. Mr. Halbert reports that it has borne 22 crops during the twenty-three years he has had the tree under observation.

The specimens illustrated in Plate XXXVI were grown by Mr. H. A. Halbert, Coleman, Tex.

MOBILE PECAN.

SYNONYMS: *Laurendine*, *Batey's Perfection*.

The Mobile pecan appears to have originated as a seedling from a planted nut at Bayou Labatre, Ala., about 1887. Though early attaining a high reputation locally, it does not appear to have attracted attention elsewhere nor to have been propagated by budding and grafting until about 1900,^a when it was propagated by F. H. Lewis and I. P. Delmas, of Scranton, Miss. About 1904-5 it was propagated by Mr. John B. Davis, of Mobile, Ala., and B. W. Stone & Co., of Thomasville, Ga. The variety was catalogued and disseminated as the Mobile by the Stone Nursery in 1904-5, though it had been locally known at Bayou Labatre under the name *Laurendine* for some years. Later it was somewhat disseminated by Mr. C. C. Batey as *Batey's Perfection*, under which name it is found in a number of orchards in Georgia. The original tree is reported to be a heavy bearer of large nuts, one crop having attained a total of 400 pounds. For several years past the crop on the original tree has shown a large proportion of faulty kernels.

DESCRIPTION.

Form long, cylindrical, four-angled, sometimes constricted at the middle and obovate; base pointed, apex conspicuously four-angled, surface often lumpy; large, 55 to 65 nuts to the pound; color bright yellowish brown with narrow purplish black markings toward apex; shell very thin, with thin and soft partitions, cracking easily and releasing kernel readily; kernel long, slender, broadly and deeply grooved, considerably corrugated, and not always plump at the tip; texture rather coarse; flavor sweet; quality good.

The specimens illustrated in Plate XXXVI were grown by Mr. F. H. Lewis, Scranton, Miss.

DAISY PECAN.

The Daisy pecan was originated about 1881^b by Mr. F. R. Wagenfuehr, of New Braunfels, Tex., as one of 20 seedlings grown by him

^a Letter from Mr. F. H. Lewis, February 17, 1910.

^b Letter from Mr. Otto Locke, February 18, 1910.

from nuts obtained on the Guadalupe River bottom. Of these about 12 survived and attained bearing age. The Daisy began bearing about 1896 and is reported to have borne good crops regularly since.

Seedlings grown from the nuts of this tree appear to have been distributed under the name Daisy for several years prior to its dissemination in 1900 by Otto Locke, of New Braunfels, Tex., in the form of scions for grafting. It appears to have been grafted first in 1900^a by Mr. J. F. Lyendecker, of Frelsburg, Tex.

DESCRIPTION.

Form long, cylindrical, compressed, with rounded base and blunt apex; size medium to large, 55 to 75 nuts to the pound, varying considerably in different seasons; surface rather lumpy; color reddish brown with a few splashes of purplish black near apex and small flecks of similar color generally over the surface; shell moderately thin, cracking easily but clinging rather tightly to the kernel; kernel bright yellow, plump, glossy, broadly grooved; texture rather brittle; flavor sweet; quality very good.

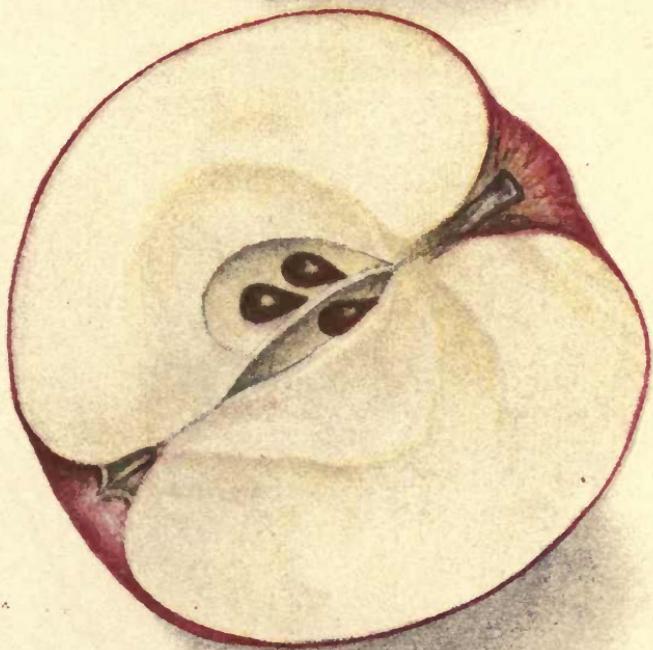
The tree is of vigorous, upright, spreading growth, with smooth, stocky, greenish-brown young wood, with large buds and large dark-green foliage.

The productiveness of the original tree has not yet been very satisfactorily determined, as it has been crowded by other trees in close proximity, but the apparently vigorous growth of young grafted trees and its entire freedom from pecan scab in the East thus far renders it a promising sort.

The specimens illustrated in Plate XXXVI were grown by Mr. Otto Locke, New Braunfels, Tex.

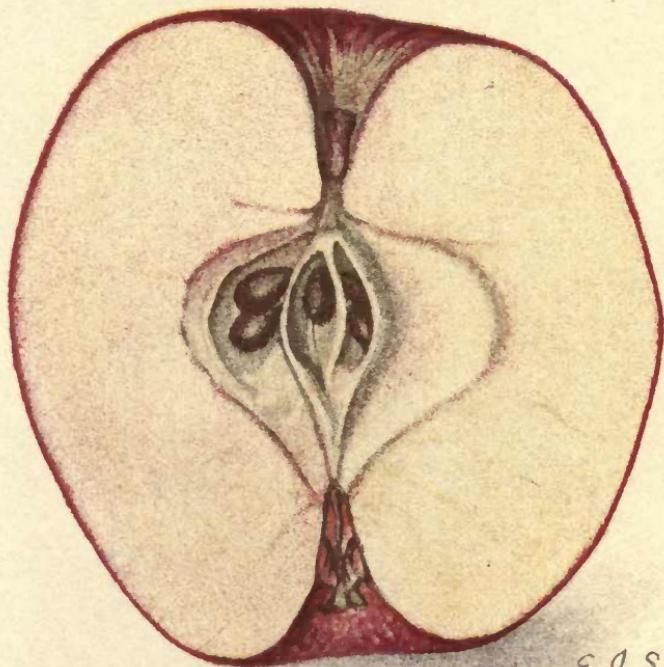
^a Letter from Mr. Otto Locke, February 18, 1910.





D. G. Passmore

MOTHER APPLE.



COFFMAN APPLE.

E. J. Schutt

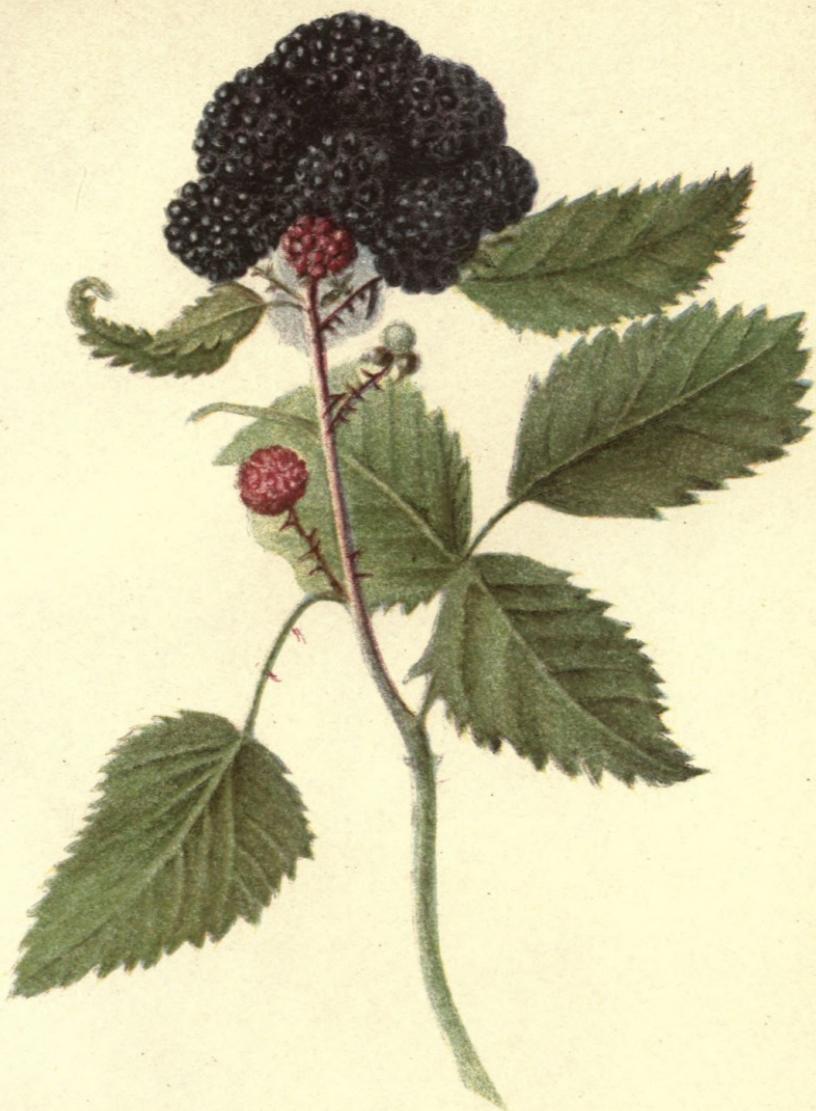


Elsie C. Lower

DIPLOMA CurrANT.

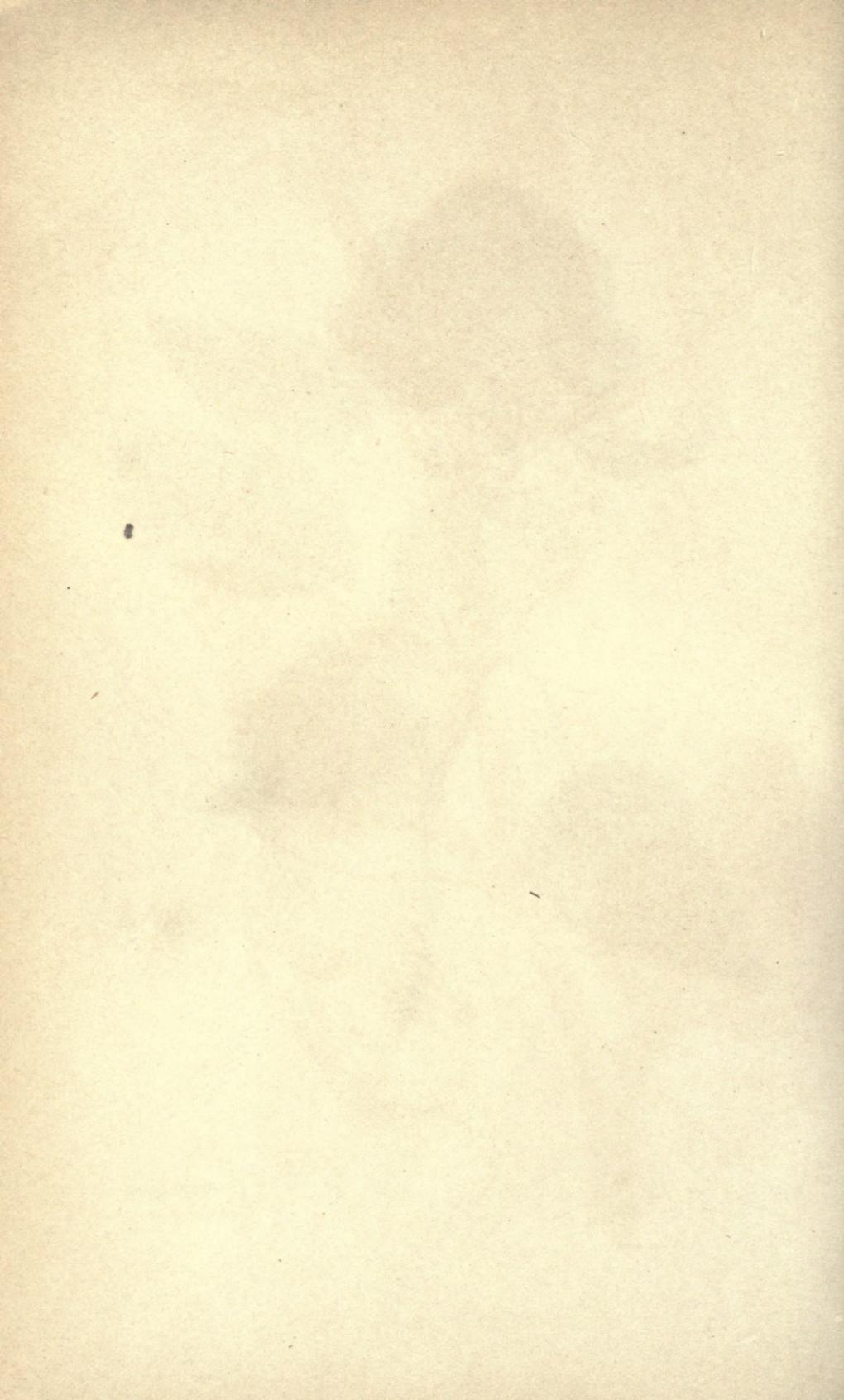


CARRIE GOOSEBERRY.



D. G. Passmore

WINFIELD RASPBERRY.





D. G. Passmore

VICTOR ROSELLE.



BRADLEY.



CLAREMONT.

HALBERT.

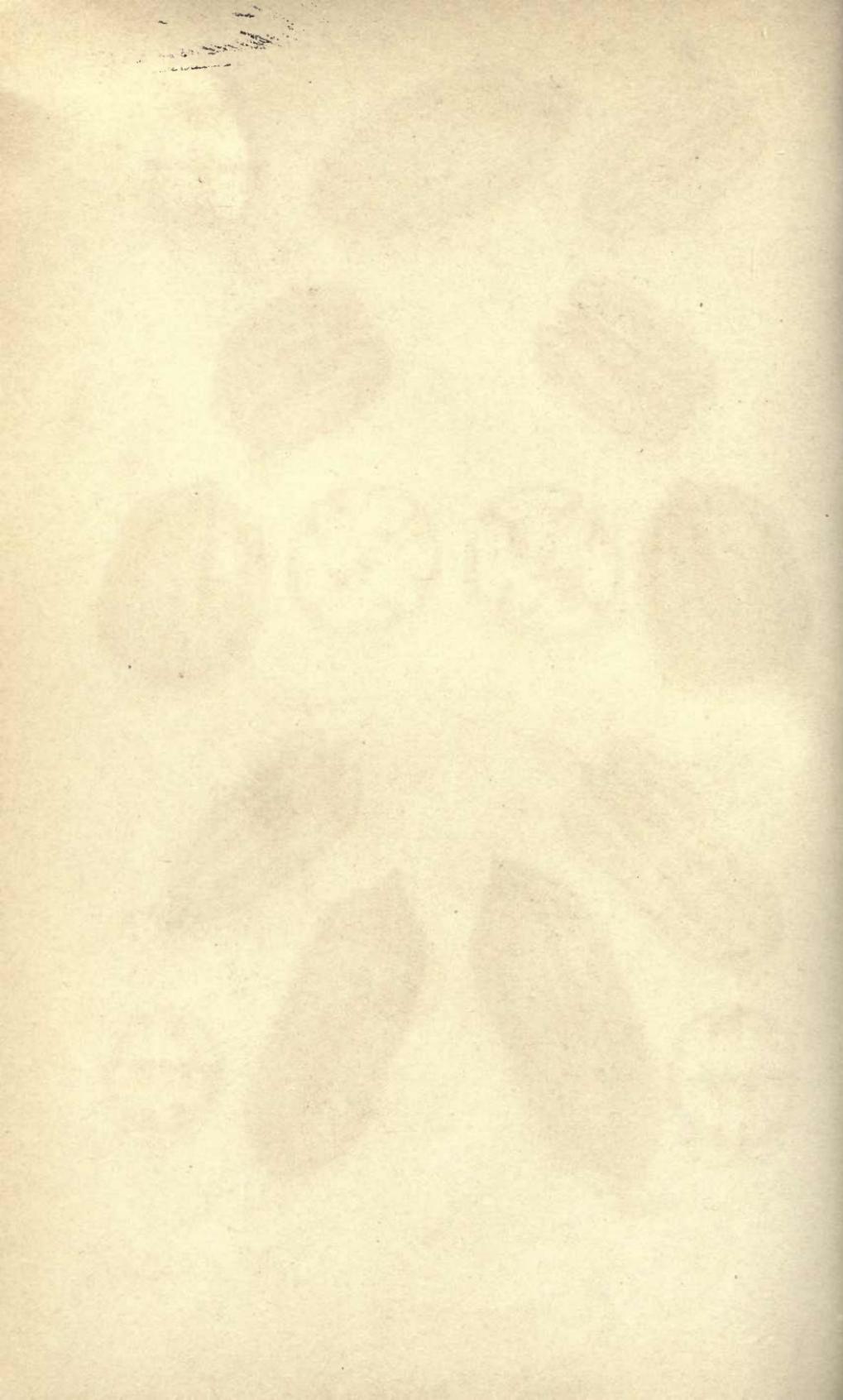


MOBILE.

DAISY.

E. J. Schutt.

PECAN VARIETIES.



W. A. Taylor
165
A. B.

Y. B. Separate 549.

PROMISING NEW FRUITS.

By

WILLIAM A. TAYLOR,

Pomologist and Assistant Chief, Bureau of Plant Industry.

[FROM YEARBOOK OF DEPARTMENT OF AGRICULTURE FOR 1910.]

BRONZE VENETIAN

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PROMISING NEW FRUITS.

By WILLIAM A. TAYLOR,

Pomologist and Assistant Chief, Bureau of Plant Industry.

INTRODUCTION.

In a country possessing the broad area of the United States, with its wide range of climatic and soil conditions, the question as to what varieties of fruits should be selected for planting is of necessity an important one. While with some of the fruits in some sections experience with certain varieties has proved them to be so satisfactory that there is little incentive to seek better sorts, this is far from true with regard to most fruits in most sections. And while in general it is to be expected that the varieties best adapted to a particular region are such as originated therein, there are many conspicuous instances where varieties have found very congenial homes at points far remote from their places of origin and under climatic and soil conditions very different from those places.

The exceptional success of such varieties as the Yellow Newtown apple in portions of Virginia, Oregon, and Washington; the Jonathan apple in Illinois, Colorado, California, and Idaho; and the Esopus (*synonym Spitzenburg*) apple in portions of Oregon and Washington, all of which varieties originated in eastern and southeastern New York, are cases in point. Such examples should encourage the systematic testing of promising new fruits as they come to notice from time to time throughout the climatic range of their respective species or groups. Such testing should, of course, be done in a small way rather than through commercial plantings, particularly when the test is to be made in a locality where conditions differ widely from those to which the sort is known to be adapted. With the tree fruits a few buds or scions of the new variety afford a sufficient start to quickly determine its probable value for planting, while with the small fruits a few plants or cuttings are sufficient, if so handled that they can be fully contrasted with the proved standard varieties of the section. Half a dozen trees reserved for use as stock trees upon which to top-work new sorts afford adequate opportunity for such experimentation on the average fruit farm if used with wise discrimination. The results obtained from such an experimental plat not infrequently point the way toward very important varietal readjustments of commercial plantings sooner and more accurately than can be done in any other way.

One purpose of this article, in continuation of similar ones printed in the Yearbook since 1901, is to call the attention of fruit growers generally to new and little-known sorts that are worthy of their attention, and to encourage the testing of such in different sections of the country. The Department of Agriculture does not distribute these varieties for experimentation except as indicated.

LOWRY APPLE.

SYNONYMS: *Lowry Seedling*, *Dixie*, *Mosby's Best*, *Mosby's Best Red Winter*.

[PLATE XXXIII.]

EARLY HISTORY.

The original tree of the Lowry apple stood on a farm owned by Mr. John Lowry (deceased), 3 miles south of Afton, Nelson County, Va. Though the variety first began to attract attention about sixty years ago,¹ only within the past few years has its probable commercial value been appreciated. Even at the present time its planting is chiefly confined to the Blue Ridge region of Virginia.

It appears to have been first propagated about 1880¹ by Mr. John Wright² (deceased), of Avon, Va., and by Mr. W. G. Lobban,³ the latter making grafts on the farm of Mr. G. W. Lobban, near the "John Lowry place." It was known locally at this period under the name Lowry, or *Lowry Seedling*. About 1890 Mr. Wright furnished scions to Mr. Elisha Robertson (deceased), who operated a nursery at Yancey Mills, Albemarle County, Va. Mr. Robertson gave it the name *Dixie* about 1895, and appears to have been the first to propagate it commercially. After Mr. Robertson's death it was propagated by Mr. A. F. Mosby (deceased), proprietor of the Richmond Commercial Nurseries, Richmond, Va., and by him named *Mosby's Best*.⁴ More recently it has been grown in several other nurseries.

The original tree died about ten years ago, having become weakened, it is said, by the excessive cutting of grafts from it.³

DESCRIPTION.

Form roundish to roundish oblate, sometimes slightly ribbed; size medium; cavity regular, medium in size and depth, with gradual slope and russet markings; stem moderately long, fairly stout; basin regular, medium to large, with gradual slope, furrowed; calyx segments small, converging; eye large, open; surface generally smooth; color yellow, washed with mixed red and splashed and brokenly

¹ Letter from W. H. Goodwin, November 21, 1910.

² Letter from J. T. Critzer, December 9, 1910.

³ Letter from S. H. Arnall, December 24, 1910.

⁴ Letter from W. T. Hood, October 17, 1905.

striped with rich crimson; dots conspicuous, yellow; skin medium thick, tenacious; flesh yellowish, rather fine grained, breaking, moderately juicy; core conical, clasping, of medium size, nearly closed; seeds plump, of medium size, brown, varying from few to many; flavor mild subacid, pleasant; quality good to very good. Season from December to February in the Piedmont, Blue Ridge, and Valley regions of Virginia, where it has been more largely grown than elsewhere and where it is highly recommended by those who have most experience with it.

Though milder in flavor than most of the varieties highly prized for dessert use, it possesses many desirable characteristics and is considered worthy of testing for commercial purposes in eastern apple districts from Pennsylvania southward. The tree is a fairly thrifty grower and good bearer.

The specimen illustrated in Plate XXXIII was grown in 1905 by Mr. Hugh Foster, Afton, Va., who at that time owned the farm on which the variety originated.

KINNARD APPLE.

SYNONYMS: *Kinnard's Choice, Kinnaird, Kinnaird's Choice.*

[PLATE XXXIV.]

EARLY HISTORY.

The Kinnard apple has long been in cultivation in central Tennessee, Virginia, North Carolina, and some other sections of the South. While therefore not entitled, strictly speaking, to consideration as a new sort, its adaptability to a much wider climatic range has recently become apparent.

This variety originated as a chance seedling in Williamson County, Tenn., on a farm then owned by Mr. Claiborn H. Kinnard, on the headwaters of the west fork of the Harpeth River, about 8 miles southeast of Franklin, the county seat, and $2\frac{1}{2}$ or 3 miles north of what is known as the Duck River Ridge.¹

The date of origin is unknown, save that it was some time prior to 1850. The original tree is said to have been discovered in a thicket and to have been in fruit when it was first found.² The variety was apparently first propagated, commercially, early in the fifties, in a local nursery operated by one "Judge" George Andrews, and it is reported to have been named *Kinnard's Choice* by him.

The earliest published description appears to have been that of Charles Downing, in 1872,³ who described it as *Kinnaird's Choice*.

¹ Letter dated November 28, 1910, from Judge H. G. Jefferson, whose father, now in his ninetieth year, boarded with Claiborn Kinnard about 65 years ago.

² Letters from Chas. L. Williams, January 5 and 14, 1911.

³ First Appendix to "Fruits and Fruit Trees of America," p. 18.

The original tree has been dead some 18 or 20 years, having been blown down during a storm. This tree was some 35 feet in height and its trunk was about 2 feet in diameter.

DESCRIPTION.

Form oblate, ribbed; size medium to large; cavity regular, large, usually with gradual slope and russet markings, sometimes lipped; stem rather short, moderately stout; basin usually regular, medium to large with gradual slope, furrowed, frequently knobbed; calyx segments small to medium, converging; eye medium, closed or partially open; surface smooth, except for occasional knobs and patches of russet; color yellow, overspread with red, usually indistinctly striped with dark crimson; dots numerous, yellow, russet, some aureole; skin rather thick, tenacious; flesh yellow, moderately fine grained, breaking, juicy; core oval, clasping, small, usually closed, sometimes partially open; seeds numerous, plump, of medium size, brown; flavor subacid, rich; quality good to very good; season from fall to midwinter.

The Kinnard apple is of the Winesap group and is adapted to the same general conditions as the Winesap, but it apparently succeeds considerably farther south than that popular old sort. During recent years it has shown special adaptability to the Piedmont and Blue Ridge regions of Maryland, Virginia, and the South Atlantic States. In the mountainous portions of northern Georgia it develops to a very high degree of perfection. While it has been highly esteemed for many years in central Tennessee in the region of its origin, it is also succeeding well as far south as northern Louisiana and northern Texas. It appears worthy of testing in the apple districts of the Rocky Mountains and Pacific coast regions. In northwestern Arkansas it has been found rather susceptible to apple scab—apparently more so than most varieties grown there—but this failing does not appear to have been reported from other sections.

The tree is thrifty and fairly vigorous, but a rather slender grower with brownish-red bark on the young wood.

The specimen illustrated in Plate XXXIV was grown by Prof. C. C. Newman, in Rabun County, Ga.

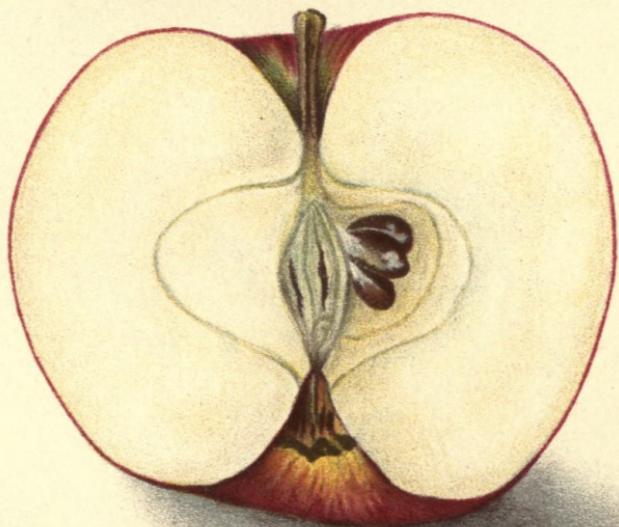
PAYNE PEACH.

SYNONYM: *Highland Beauty*.

[PLATE XXXV.]

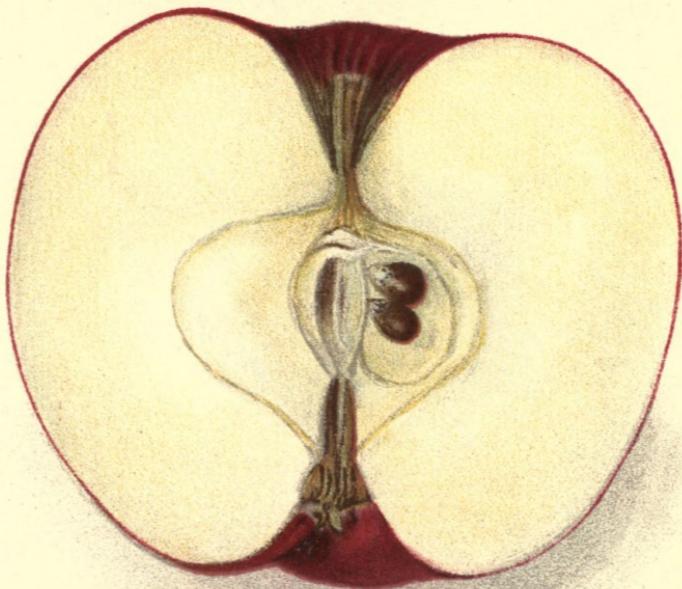
ORIGIN.

The original tree of this variety developed in 1901 as a sprout from the stock of a St. John peach tree broken off below the point of budding in the orchard of E. B. Payne & Sons, near Cloverdale, Barry County, Mich.



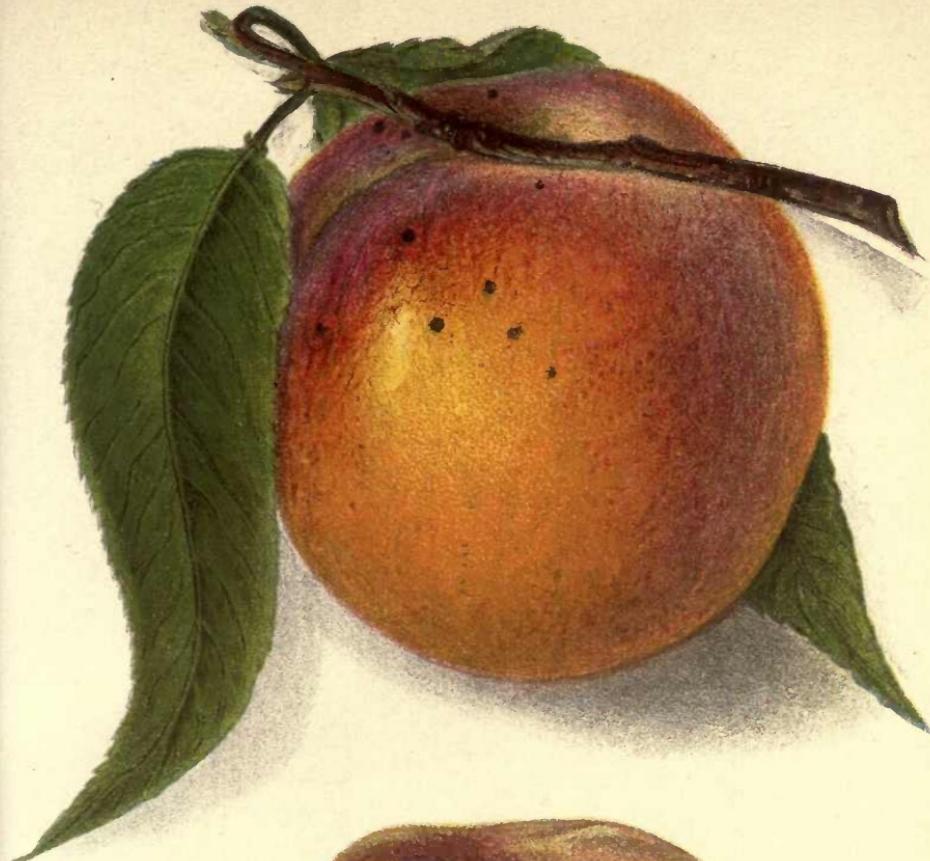
A. A. Newton.

LOWRY APPLE.



A. A. Newton.

KINNARD APPLE.



- E. I. Schutt -

PAYNE PEACH.



HOOSIER RASPBERRY.

- E. I. Schutt

The tree that developed from this sprout bore its first crop when it was 3 years old. It was first called *Highland Beauty* in correspondence and when exhibited, but it does not appear to have been described under that name. It was described as Payne by Fletcher in 1910.¹

It was first propagated in 1907 by E. B. Payne & Sons for their own planting.

DESCRIPTION.

Form roundish; size large; cavity regular, of medium size and depth with gradual slope and red markings; stem short, stout; suture shallow, extending from cavity to apex; apex a small point at termination of suture; surface soft, velvety; color yellow, blushed, and splashed with dark crimson; dots minute; down short, loose; skin thin, tenacious; flesh yellow, slightly stained at stone; texture melting, tender, juicy; stone oval, free, medium to large; flavor subacid, sprightly, slightly astringent; quality good to very good; tree vigorous, spreading, productive; leaves lanceolate, of medium size, with rather short, thick petioles; glands reniform; flowers small. Season last week of August and early September in the locality of its origin, ripening about a week in advance of St. John. The tree is productive and is considered hardier than most commercial varieties grown in that section.

This variety, though not yet tested in other than its original locality, is considered promising for test in northern peach-growing districts.

The specimen illustrated in Plate XXXV was grown by E. B. Payne & Sons, Cloverdale, Mich.

HOOSIER RASPBERRY.

[PLATE XXXVI.]

EARLY HISTORY.

This very promising blackcap raspberry originated on the farm of the late John W. Durm, 4 miles east of Pekin, Ind., about 1895, as the result of a definite effort to produce a variety that should be both very hardy and resistant to anthracnose. It is said to be a cross between Gregg and Mammoth Cluster.

In the development of this variety Mr. Durm and Mr. Alvia G. Gray (also of Pekin, Ind.) have been closely associated. They were mutually interested in producing hardy and disease-resistant varieties and from time to time planted large numbers of raspberry seeds with

¹ Varieties of Fruit Originated in Michigan, Special Bulletin No. 44, Michigan Agricultural College Experiment Station, August, 1910.

this end in view. The seed from which the Hoosier grew was planted by Mr. Durm about 1895. It was grown jointly by himself and Mr. Gray for a time for the purpose of testing it. After its merits had become apparent to them it was named "Hoosier" in 1898 by Mr. Durm, who, shortly before his death, turned it over to Mr. Gray to propagate for introduction and dissemination.

During 3 or 4 years following 1898, it was propagated in a limited way and the plants sold locally until 1902, when it was offered for sale to the trade, a price list issued that year by Mr. Gray containing the first published use of the name "Hoosier" for the variety.

It has thus far proved free from disease, vigorous, productive, and hardy, bearing good crops of fruit in some years under very unfavorable climatic conditions and when most other varieties in comparison failed.

DESCRIPTION.

Berries roundish, large to very large in size, borne in moderately loose clusters of 15 to 18 or more fruits and easily detached from the rather small receptacles; drupes large, glossy, black with a durable bluish bloom; pedicels slender, thorny; calyx small, pale green; flesh dark-purplish red, meaty, solid, firm, moderately juicy; seeds rather large and hard; flavor subacid with pleasant aroma; quality good.

The bush is a strong, vigorous grower and apparently possesses a rather unusual degree of hardiness. It is considered promising for the Middle Western States.

The cluster illustrated in Plate XXXVI was grown by A. G. Gray, Pekin, Ind.

DUGAT ORANGE.

[PLATE XXXVII.]

EARLY HISTORY.

The original Dugat orange tree is reported to have come as one among a hundred imported from Japan about the year 1880 as Unshiu (commonly known in this country as Satsuma) by Leonard Coates, then of Napa, Cal. About 1882 Col. W. S. Dugat obtained two of these orange trees from Mr. Coates's nursery and planted them on his place in Beeville, Tex. One of these trees died. After the other one (which later came to be known as the "Dugat") had been planted for several years, its habit of growth showed such striking peculiarities as to indicate that it was distinct from other sorts known in that section. Mr. G. Onderdonk, of Nursery, Tex., became interested in this tree because of its evident value for that section and has been largely instrumental in directing attention to it.¹

¹ Letters and historical notes from G. Onderdonk, October 18 and December 13, 1904.

The dwarfish habit of growth of the tree gave the impression for several years that it, like the Unshiu trees imported at the same time, was on trifoliata stock. This was later found to be an error, although it has since been found to succeed well upon that stock. Correspondence with the importer and other efforts to identify the variety having failed to establish its identity, it gradually became known as the Dugat. It appears to have been first propagated commercially in this country about 1898¹ by Mr. R. W. Holbert, Arcadia, Tex. Since that time it has been considerably disseminated through Texas and Florida nurseries.

DESCRIPTION.

Form roundish, very slightly ribbed; size medium to large; stem stout, placed in a small wrinkled cavity; apex slightly flattened; surface rather rough; oil cells large, indented; rind tenacious, moderately thick; segments commonly 12, irregular, rather loose, leaving an open center; seeds plump, variable in size, color, whitish; flesh yellowish translucent, tender; juice abundant, translucent; flavor sprightly subacid with pleasant bouquet; quality good. Season early, about the first of December in southern Texas. The crop is more uniform in size than Satsuma, and like other true oranges it keeps better than the Mandarin varieties.

The tree makes a dwarfish, compact growth and is practically thornless. For some time it was thought to be fully as hardy as Satsuma, but the experience of the past six years indicates that it is injured by cold sooner than the Satsuma on the trifoliata stock in Texas. The tree appears to have remarkable recuperative capacity, however, and when banked to protect the trunk from destruction by frost, quickly renews its top. Under such conditions it is reported to come into fruit again much more quickly than the Satsuma. It is also considered a more regular bearer than Satsuma. Its chief value thus far indicated is for the Texas coast country, where it is being considerably planted.

The specimen illustrated in Plate XXXVII was grown by Mrs. E. M. Dugat, Beeville, Tex.

FAMILY AVOCADO.

[PLATE XXXVIII.]

ORIGIN.

The original tree of the Family avocado was found by Prof. P. H. Rolfs, now director of the Florida Agricultural Experiment Station, on a place at Buena Vista near Miami, Fla., which came into his

¹ Letter from G. Onderdonk, January 12, 1911.

possession in 1902.¹ The age of the tree at that time is uncertain, but it was probably 5 or 6 years old. Its previous history is unknown.

It was first propagated for experimental purposes at the Sub-tropical Laboratory of the Bureau of Plant Industry at Miami in 1904, and has since been quite widely distributed for testing. Later, bud wood was furnished to a number of nurserymen, several of whom have propagated it commercially. The name "Family" was given it about the time that it was first propagated in 1904.

The original tree has failed to set fruit in but one year since 1902. It has the rather unusual habit of ripening its fruit, which is borne in clusters, over a period of 8 to 10 weeks, beginning 1 to 2 weeks later than the earliest varieties and continuing until the first fruits of the late sorts are ripe, or even later. It was because of this peculiarity that the name "Family" was selected for it by Professor Rolfs, it being well adapted to the supplying of fruit for family use; but it is less desirable for commercial purposes than the varieties that ripen their fruit more uniformly.

The original tree is still standing and is about 18 to 20 feet high. It is now rather spreading in habit of growth; when younger it was apparently more upright in growth, with branches somewhat inclined to droop.

DESCRIPTION.

Form obconical; size medium to large; cavity regular, small, shallow, with gradual slope and furrowed; stem stout; apex furrowed, russeted; surface undulating; color yellowish green, marbled, splashed and striped with purplish red; dots numerous, yellow, many indented; skin of medium thickness; flesh yellowish green, tender, buttery; seed roundish, large; flavor mild, pleasant; quality good to very good; season rather early to rather late.

This variety is especially valued for local use in southern Florida and is worthy of testing in California.

The specimen illustrated in Plate XXXVIII was grown by Prof. P. H. Rolfs at Miami, Fla.

CECIL MANGO.

[PLATE XXXIX.]

EARLY HISTORY.

The interest in the mango in Florida has now continued for a sufficient time to begin to bring to light some good seedlings grown from seed of choice imported sorts. Choice new varieties may now be expected to appear in considerable numbers as trees in seedling orchards come into bearing sufficiently to demonstrate their distinctive

¹ Letter from P. H. Rolfs, November 1, 1910.



A. A. Newton.

CECIL MANGO.

characteristics. One of the most promising thus far is the Cecil, which originated at Miami, Fla.

In 1902¹ about 200 mango fruits of the "Philippine" type were received by Mr. S. A. Belcher of Miami, Fla., from some point in Cuba. The seeds of these fruits were planted in pots and later about 100 trees which grew therefrom were transplanted to permanent places on Mr. Belcher's homestead, now owned by Hickson Brothers, 2 miles west of Miami.

The tree to which later the name "Cecil" was given bore a few fruits for the first time when it was 5 years of age. It was named in the spring of 1908, after the unusual merits of the fruit had become apparent, the name having been first published in a local paper. Its commercial propagation was begun in 1910.

The tree is said to be a very vigorous grower, symmetrical in form, and a heavy bearer. The fruit begins to ripen at Miami about the first week in June.

DESCRIPTION.

Form oblong reniform, rather slender; size large; cavity regular, small, shallow, slope gradual; stem medium slender, fleshy where it joins the fruit; tip an inconspicuous beak, usually about half an inch from the longitudinal apex of the fruit; surface nearly smooth; color rich greenish or golden yellow, marbled lightly with brownish yellow; dots numerous, russet, sometimes subcutaneous, green or gray; bloom whitish; skin medium thick, tenacious; flesh yellow, tender, juicy with but very little fiber; seed thin, oblong, large; flavor sweet or mild subacid, rich, aromatic, pleasant; quality good to very good; season June to August at Miami, Fla.

Apparently adapted to Florida and worthy of testing in Porto Rico and Hawaii.

The specimen illustrated in Plate XXXIX was grown by Hickson Brothers, Miami, Fla.

TAMOPAN PERSIMMON.

[PLATE XL.]

HISTORICAL NOTES.

The introduction of the Japanese persimmon into the United States aroused widespread interest throughout the country on account of the precocity of the trees and the large size and great beauty of the fruit. For many years large importations of grafted trees from Japan were made by commercial nurseries, with the result that the varieties obtainable from Japanese nurseries were widely tested throughout

¹ Letters from Hickson Brothers, November 9 and 17, 1910.

the country. Much disappointment resulted when no sort was found among them sufficiently hardy to endure the winters north of the Gulf and South Atlantic States, except in specially sheltered locations. The fruits of most of them were found to retain their astringent flavor until they were too soft to ship or handle, so that their market value was considerably impaired.

Rather indefinite reports continued to come from travelers and missionaries of hardier large-fruited sorts grown in the interior of China that were superior in many respects to the Japanese varieties.

In an effort to obtain stock of such varieties, Hon. Charles Denby, then United States Minister to China, at the request of the Pomologist of the Department, in 1894 and again in 1895, procured and forwarded to the Department scions of sorts the fruit of which was of high repute in the Peking market. The scions were of two varieties, and Mr. Denby reported upon them at the time as follows:¹

These scions were procured at the village of Niuchuang, about 100 miles west of Peking. They were brought from this place because of the reputation it has for persimmons, being much resorted to by the Chinese themselves for scions. The trees from which they were cut grew on level ground at the foot of the hills. The soil was a yellowish loam, and the crops grown in the vicinity were Indian corn and tall millet. An ordinary specimen of the Kao Chuang variety examined by me was 9 inches in circumference, 2½ inches thick, and weighed 6 ounces. Such fruit is sold at retail in Peking in immense quantities at 1 to 2 cash each (5 to 10 for 1 cent gold). The Mo pan variety measured 12 inches in circumference, 2½ inches thick, and weighed 11½ ounces. This retailed at 3 to 5 cash each (2 to 3 for 1 cent gold).

The fruit is orange yellow in color. It is sweet in flavor, recalling the taste of the American persimmon without its astringent effect. It is eaten raw. It ripens without frost.

Unfortunately the several lots of scions sent at that time, though packed and forwarded with great care, failed to survive the journey, arriving too dry and lifeless to propagate. Persimmon seeds sent by Minister Denby at the same time germinated freely, and several hundred trees were grown from them for distribution, but all proved to be of the small-fruited *Diospyros lotus*, which is used in the Orient as a stock for the more highly esteemed varieties.

After this unsuccessful effort no systematic attempt to obtain the large varieties appears to have been made until 1905, when Mr. Frank N. Meyer, agricultural explorer in the Office of Foreign Seed and Plant Introduction of the Bureau of Plant Industry, sent from the Ming Tombs Valley, west of Peking, several lots of scions of a variety evidently closely similar to, if not identical with, the "Mo pan" previously obtained by Minister Denby. This sort, which Mr. Meyer

¹ Letter of Hon. Charles Denby to Secretary of Agriculture, dated Peking, November 19, 1895.

later found growing in several localities in China, he states is known as "Ta mo pan shi tze," signifying "big grindstone persimmon," on account of its large size and peculiar flattened form. Mr. Meyer states:¹

The fruit of this particular variety has a bright orange-red color, grows to a large size, measuring 3 to 5 inches in diameter, and sometimes weighs more than a pound. It is perfectly seedless, is not astringent, and can be eaten even when green and hard. It stands shipping remarkably well. The fruit is of a peculiar shape, having an equatorial constriction, which makes it look as if two fruits had been joined, or, to use a more terse expression, as if somebody had sat upon it. The trees are very thrifty growers when once thoroughly established. They reach a height of 30 to 50 feet, and though the young branches are very erect, the older ones bend down a good deal because of the great weight of the fruit. The trees seem to bear very heavy crops in some years, while in other years the harvest is small. A drawback of a large crop is that the great weight of the fruit causes the large limbs to snap off unless they are propped or tied up. This, therefore, has to be done regularly. It seems that when the trees of this variety reach the age of 40 or 50 years they begin to decline in vigor; still, here and there old specimens may be seen that are near the century mark.

These large persimmons are mostly used when fresh. Foreigners in China are fond of eating them with a spoon, and after being kept in a cool place for some hours the fruit is very refreshing. They can be eaten while still hard, like apples. By careful handling and by keeping the persimmons at a low temperature they can be preserved for several months. To keep them through the winter the Chinese pile them in heaps, let them freeze thoroughly, and keep them frozen until they are needed. When wanted, they are simply put into a vessel with cold water to be thawed slowly, and then they are as good as when freshly picked. They can also be eaten when slightly frozen, like sherbet, and occasionally they are quite acceptable in that condition.

Scions and young trees of this variety have been experimentally distributed by the Office of Foreign Seed and Plant Introduction under the name Tamopan (S. P. I. No. 16921), and the variety has been sufficiently fruited to indicate its high promise. The fact that the fruit loses its astringence before softening gives it special value, and its unique form constitutes an effective identification mark by which it can be readily recognized in market.

DESCRIPTION.

Form oblate to roundish oblate with a conspicuous equatorial constriction which distinguishes it from other types; size large to very large; cavity regular, large, deep, slope gradual, marked with four furrows and russeted; stem moderately stout; calyx segments of medium size, reflexed around stem; apex depressed, terminating in

¹Agricultural Explorations in the Fruit and Nut Orchards of China, Bulletin 204, Bureau of Plant Industry, pp. 11-12.

a small point located in the intersection of the sutures which divide the fruit into well-defined quarters; surface smooth; color rich yellow to orange yellow; dots very minute; skin medium thick, tenacious, covered with transient, whitish bloom; flesh yellowish, translucent; texture very tender, melting, juicy; seeds undeveloped in specimens examined; flavor sweet, losing astringence before softening; quality very good. The tree is a strong, vigorous grower, showing good evidence of productiveness.

The fruiting of this variety in America has thus far been restricted to North Carolina and Florida. Its cold endurance is therefore not yet determined, but it is considered promising for experimental planting in the territory south of the Potomac, Ohio, and Missouri rivers and on the Pacific coast. Its northern source in China suggests the possibility of sufficient hardiness to thrive as far north as our native persimmon succeeds.

The specimen illustrated in Plate XL was grown by the Glen St. Mary Nurseries Co., Glen St. Mary, Fla.

O

M. A. Taylor
Y. B. Separate 581.

PROMISING NEW FRUITS.

BY

WILLIAM A. TAYLOR,
Pomologist and Assistant Chief,

AND

H. P. GOULD,

*Pomologist in Charge of Fruit District Investigations,
Bureau of Plant Industry.*

[FROM YEARBOOK OF DEPARTMENT OF AGRICULTURE FOR 1911.]

The gold of the hills of California is so well known and well deservedly famous that it need not be repeated here. It is alluvial, and the miners have been compelled to work hard to get it. The soil is very hard, being composed of the same materials as the surface rocks, being extremely brittle, softening rapidly at the touch. The tree is a strong, vigorous growth, having good foliage and fruitfulness.

The finding of this variety in America has therefore been restricted to the state of Florida. The gold occurrence of therefore can be determined only by a comparison with those found in the same locality in the country south of the Pyrenees, and also in South America and on the Pacific Coast. The northern varieties of this sun-

PROMISING NEW FRUIT

The author is indebted to Prof. Nels, of the University of Michigan, for the following description:

MILITIA F. TAYLOR

(Also known as Malpighia.)

—

H. R. GOLD

This fruit is easily dried to satisfy a long journey. It is delicious, and very nutritious.

[This was introduced in England by Mr. J. M. G. in 1851.]

PROGRESSIVE NEW FRUITS.

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CORNELL APPLES.

SYNONYMS: Cornell's Apple, Cornell's Favorite.

PLATE XLIX.

EARLY HISTORY.

The Cornell apple, strictly speaking, is not a new variety, yet it is unknown to a large proportion of growers. It has apparently

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PROMISING NEW FRUITS.

By WILLIAM A. TAYLOR, *Pomologist and Assistant Chief*, and H. P. GOULD, *Pomologist in Charge of Fruit District Investigations, Bureau of Plant Industry.*

INTRODUCTION.

Since fruit culture first began to receive serious and systematic attention in the United States the question of what varieties to plant has been an important one in the minds of fruit growers and in the deliberations of horticultural and pomological societies.

That this matter will continue to need attention for many years to come is inevitable. Fruit culture is constantly being extended into new regions where new conditions or combinations of conditions of climate, soil, etc., exist; new marketing facilities are developed; and changes in the market demands occur. These factors influence in a marked degree the selection of varieties of fruits for planting by the more discriminating and farsighted fruit grower. More and more are varieties being planted to meet particular conditions and for special rather than for general purposes.

In this perpetual effort to obtain better varieties and such ones as will more satisfactorily meet particular needs, sorts that have long been in cultivation but which have remained largely in obscurity sometimes come into prominence because of their adaptability for some new requirement. Such varieties have frequently been included in the series of articles of which the present paper is a continuation.

The varieties described in this article have been selected because of the value which they are believed to possess in the further development of fruit culture.

The Department of Agriculture has no stock of these varieties available for distribution.

CORNELL APPLE.

SYNONYMS: *Cornell's Fancy, Cornell's Favorite.*

[PLATE XLIX.]

EARLY HISTORY.

The Cornell apple, strictly speaking, is not a new variety, yet it is unknown to a large proportion of growers. It has apparently

been in existence for 100 years, or perhaps longer. What appears to be an authentic account of its origin, published in 1869,¹ states that "The Cornell's Fancy Apple originated some sixty or seventy years ago on the farm of Gilliam Cornell, near the Street road, in Southampton Township, Bucks County, Pa."

From the dates mentioned it is evident that this variety originated in the last part of the eighteenth or the first part of the nineteenth century.

The original tree appears to have been a fence-row seedling. In its early years it attracted considerable local attention, and many scions of it were distributed in adjoining portions of Philadelphia and Montgomery Counties, Pa. The first published description of it appears to have been that of Downing in 1857.²

DESCRIPTION.

Form oblong conic; size medium to large; cavity regular, sometimes slightly irregular, usually large, rather deep, slope gradual, with russet markings; stem medium to long, moderately stout; basin usually regular, of medium size and depth, with gradual slope usually, sometimes furrowed or corrugated; calyx segments medium, converging; eye small to medium, closed; surface smooth, sometimes more or less ribbed; color creamy or yellowish white, washed with mixed red, striped with bright crimson, and slightly overspread with gray; dots usually rather large and conspicuous, occasionally minute, often aureole, grayish, sometimes brownish; skin rather thin, usually tender; flesh yellowish white, fine grained, very tender, moderately juicy; core conical, clasping, medium in size, slightly open; flavor mild subacid, pleasant; quality good to very good. Season August in middle latitudes.

The tree has been reported to lack vigor in some sections, but apparently in regions to which the variety is well adapted it makes a good growth and is usually productive. The fruit should not be left on the tree too long, as it has a tendency to crack and become mealy when fully ripe. Though it has become quite widely disseminated, it is grown only in very limited quantities and is largely unknown in the markets. In the further extension of early-apple culture it is believed that it can be made an important sort in middle latitudes.

The specimen illustrated in Plate XLIX was grown by Thomas O. Duvall, Burtonsville, Montgomery County, Md.

¹ The Gardener's Monthly, vol. 11, 1869, p. 376.

² Downing's Fruits and Fruit Trees of America, revised edition, 1857, p. 131.

SAN JACINTO APPLE.

SYNONYM: *Mrs. Bryan*, erroneously.

[PLATE L.]

EARLY HISTORY.

The San Jacinto apple appears to have first come to light in the orchard of Dr. A. M. Ragland, of Pilot Point, Denton County, Tex., under the following circumstances:

About 1881 or 1882 he obtained 12 apple trees under the name "Mrs. Bryan" from a Georgia nursery.¹ When these trees came into bearing, four of them produced fruit which was entirely distinct in size, color, and time of ripening from the fruit borne by the other 8 trees, which were true to name. After several years of fruiting, Dr. Ragland was so favorably impressed with the value of the fruit from these four trees that he had the variety propagated. In the year 1900 it was propagated by T. V. Munson & Son and listed for sale in a catalogue issued in 1902 under the name "Mrs. Bryan," the fact that it differed from the variety entitled to that name not having been established at that time.

Meanwhile doubt had arisen as to which of these two varieties was the true "Mrs. Bryan." Specimens of the fruit were submitted to the proprietors of the nursery from which the trees came, but they were unable to identify them, having never seen a variety like these specimens so far as they knew. Specimens were also sent to Mrs. J. W. Bryan, of Dillon, Dade County, Ga., on whose place the Mrs. Bryan apple originated. She did not recognize the variety, but was positive that it was not the "Mrs. Bryan."

It having become evident that the identity of this variety was entirely unknown up to this time to the parties who were chiefly concerned and in view of the apparent value of the variety for southern latitudes and the interest which it was attracting it was named "San Jacinto"² by Dr. Ragland, in honor of the battle of San Jacinto, which took place on April 21, 1836, near the mouth of the river of that name and which resulted in the establishment of Texas as an independent republic.

In the fall of 1903 this variety was listed for sale under its present name in the catalogue of the Munson Nurseries, Denison,³ Tex., this being, so far as known, the first publication of the name.

Since the fact that it is distinct from "Mrs. Bryan" became evident some 8 or 10 years ago, its history has received more or less con-

¹ Letter from Dr. A. M. Ragland, December, 1911.

² Letter from Mr. T. V. Munson, December, 1911; also letter from Dr. A. M. Ragland, December, 1911.

³ Letter from Mr. T. V. Munson, December, 1911.

stant consideration, but no older tree of the same variety has been discovered to which the four trees planted in Dr. Ragland's orchard about 30 years ago can be traced. Apparently all of the trees of the variety which have been planted since it began to attract attention some 10 or 12 years ago trace directly to Dr. Ragland's orchard. It is now propagated under the name "San Jacinto" by a considerable number of nurseries.

DESCRIPTION.

Form roundish to oblong oval; size medium to large; cavity irregular, medium in size and depth, slope rather abrupt with russet markings, sometimes lipped; stem of medium length, fairly stout; basin regular, medium to large, slope gradual, more or less furrowed; calyx segments rather long, converging; eye medium to large, closed; surface smooth, except some slight ribbing; color yellowish to greenish white, washed with suffused red over nearly the entire surface, with few splashes and stripes of bright crimson; dots numerous, sometimes indented; skin medium thick, tenacious; flesh white or yellowish, sometimes slightly tinted; texture medium fine, breaking, juicy; core oval or conical, clasping, of medium size, open; flavor subacid, pleasant; quality good to very good. Season in northern Texas from the first of July until the middle of August, the main portion of the crop following the Red June apple.

The tree resembles the Red June, but it is a more vigorous grower than that variety. It begins bearing early and is proving productive. The fruit is also quite like the Red June type, and there is some reason for supposing that it is a seedling of that old and widely grown southern variety.

It seems to be particularly well adapted to southern latitudes, being one of the most satisfactory apples of its season in northern Texas, Oklahoma, and other southern and southwestern points.

The specimen illustrated in Plate L was grown by Dr. A. M. Ragland, Pilot Point, Denton County, Tex.

SHIAWASSEE APPLE.

SYNONYMS: *Shiawassee Beauty, Missoula.*

[PLATE LI.]

EARLY HISTORY.

Though the Shiawassee apple has been in cultivation for 60 years or more, it is grown but comparatively little. Its early history, as given by the late T. T. Lyon, is as follows:

The fruit originated from the pomace of a lot of grafted fruit grown in a nursery in Gaines, Genesee County [Mich.]. A portion of the trees grown from them were sold, ungrafted, to Mr. Beebe Truesdell, deceased, who planted them

in Vernon, Shiawassee County. Among these was the original tree of this variety, which has now borne full and regular crops for more than 10 years, with the exception of two seasons, when the crop was thinned by frost.¹

This variety belongs to the Fameuse group of apples, as does the McIntosh,² and is commonly supposed to be a seedling of Fameuse, which was a well-known variety in Michigan at the time when Shiawassee originated.

DESCRIPTION.

Form oblate, sometimes slightly conical; size medium to large; cavity broad, deep, rather abrupt; stem of medium length, moderately stout; basin regular, large, with gradual slope; calyx segments medium, converging, sometimes reflexed at tip; eye small to medium, open or partially closed; surface smooth; color pale yellow, washed over nearly the entire surface with mixed crimson stripes of purplish red, sometimes thinly overspread with gray; dots rather scattered, usually small, sometimes more conspicuous, grayish or yellowish in color; skin moderately thick, fairly tenacious, sometimes covered with a light bloom; flesh white, sometimes very lightly tinted with red, fine grained, tender, juicy; core conical or oblate conic, clasping, of medium size, open; flavor subacid, aromatic; quality very good. Season October to January.

It has been quite widely though not extensively grown throughout the older apple-producing regions of the Northern States and also in some of the Canadian Provinces. The tree is a strong, upright grower, but the branches become more or less drooping as it attains age. It is more highly esteemed for and is perhaps better adapted to home use than it is for general commercial purposes, but its high quality and attractive appearance, together with its productiveness, make it a variety of more than average merit for northern apple-growing regions. The tree is considered as hardy as the Fameuse, which indicates its adaptability to all but the colder apple regions. It is less susceptible to apple scab than the Fameuse, but sometimes shows a tendency to rot at the core.

Attention has been more or less directed to the Shiawassee apple in the Bitter Root Valley of Montana in recent years, because of its apparent usefulness in pollinating the McIntosh apple, the latter being a leading commercial variety in that region. As its identity in the Bitter Root Valley, however, was unknown until recently, it has been locally propagated there under the name "Missoula."

The specimen illustrated in Plate LI was grown by H. C. and M. D. Ward, Pontiac, Oakland County, Mich.

¹ Michigan Farmer, Nov. 12, 1859, and Hovey's Magazine of Horticulture, February, 1860, p. 64.

² For illustration and description, see Yearbook, U. S. Dept. of Agriculture for 1901, p. 383.

AYER PEAR.

[PLATE LII.]

EARLY HISTORY.

The Ayer pear originated about 30 years ago, as a chance seedling which came up in a vineyard owned by Mr. O. H. Ayer, near Sibley, Douglas County, Kans. The small seedling tree had made a growth of only two or three leaves when discovered. Mr. Ayer had a spade with him at the time and transplanted it at once to a point just outside the vineyard, where it is still standing.¹ It was much neglected for some years and was rather late in coming into bearing, not fruiting until it was about 10 years old.

The tree is a rather slow, upright grower, similar to the Bartlett tree in form, but the foliage is dark colored like that of the Seckel. The owner is inclined to think it is a seedling of the latter, as a tree of that variety stood only a few rods distant from the place where the original tree first appeared. His assumption is that some one in passing through the vineyard while eating a Seckel pear from the nearby tree of that variety threw the core on the ground, and that the tree in question grew from one of the seeds which it contained. It has been propagated to a very limited extent, but not disseminated commercially.

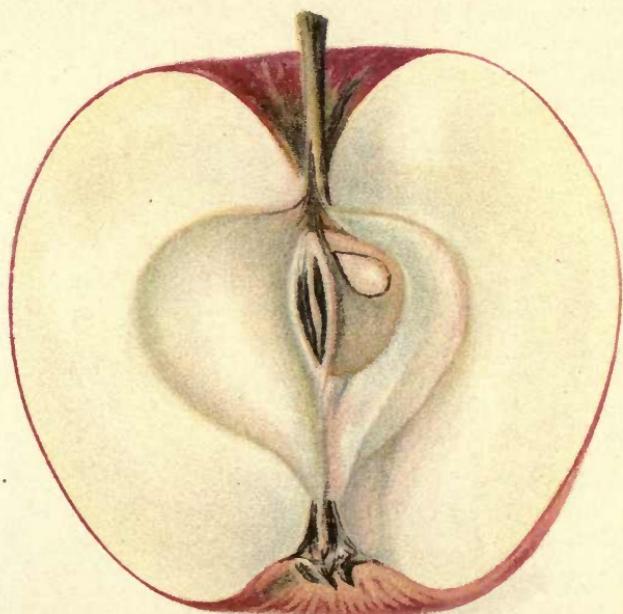
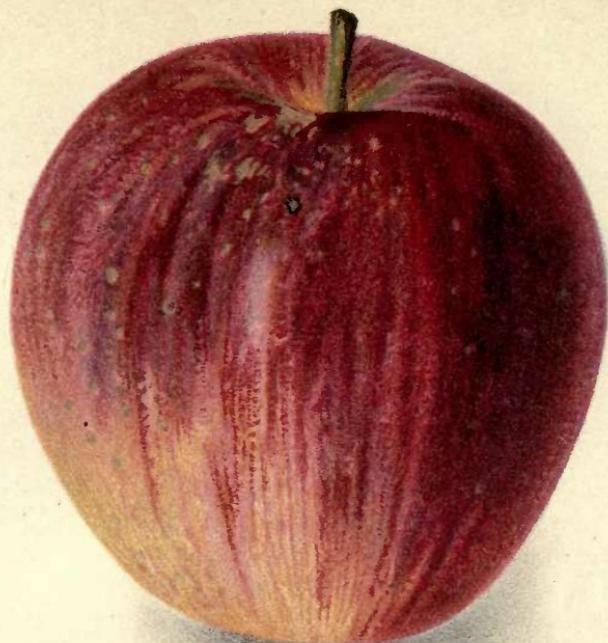
DESCRIPTION.

Form obovate; size medium; cavity irregular, medium to large, depth medium, slope rather gradual, marked with russet folds or wrinkles; stem of medium length, moderately stout; basin regular, medium in size and depth, slope gradual, with shallow corrugations and russet markings; calyx segments short, sometimes rather fleshy, converging or slightly reflexed; eye medium, open or partially closed; surface somewhat undulating, moderately smooth, with some russetted areas; color light greenish or pale lemon yellow, frequently with a light-scarlet blush on exposed side; dots numerous, minute, russet; skin thin; flesh whitish or yellowish white, fine grained, buttery, melting, juicy; core oval, clasping, of medium size, closed; flavor mild subacid, rich; quality very good, fairly comparable with Seckel. Season in eastern Kansas the last of July and early August—two or three weeks earlier than the Bartlett.

From Mr. Ayer's observation of this variety he is inclined to think it is self-sterile. Up to the present time the tree has shown no tendency to blight, its rather slow habit of growth favoring it in this respect. In productiveness it is said to be about equal to the Bartlett.

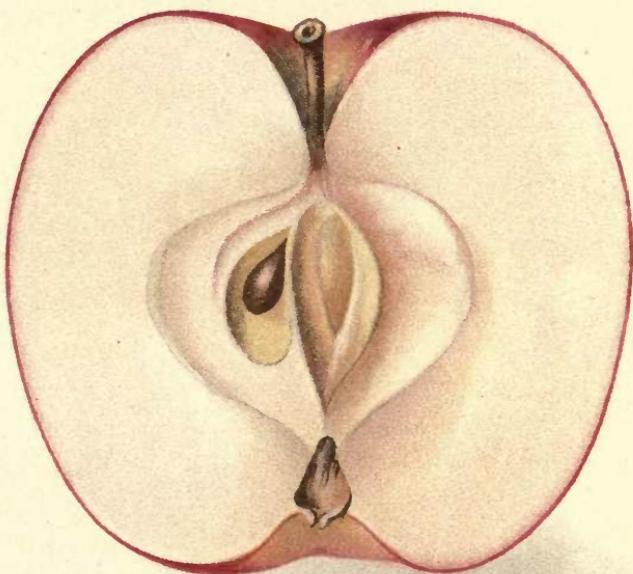
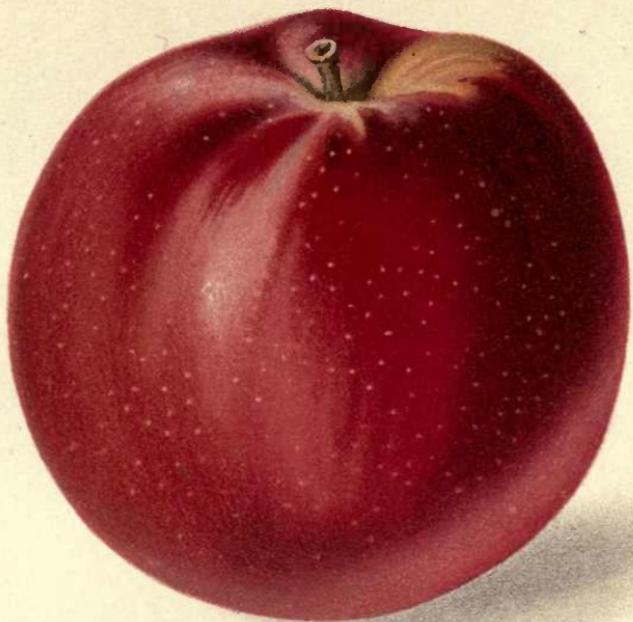
Though the range of adaptability of this variety has not been determined, the high quality of the fruit and the degree of blight

¹ Letters from Mr. O. H. Ayer, November, 1911.

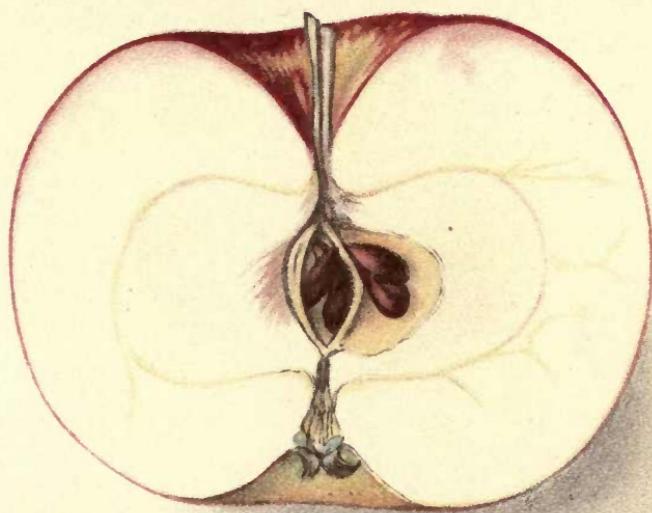
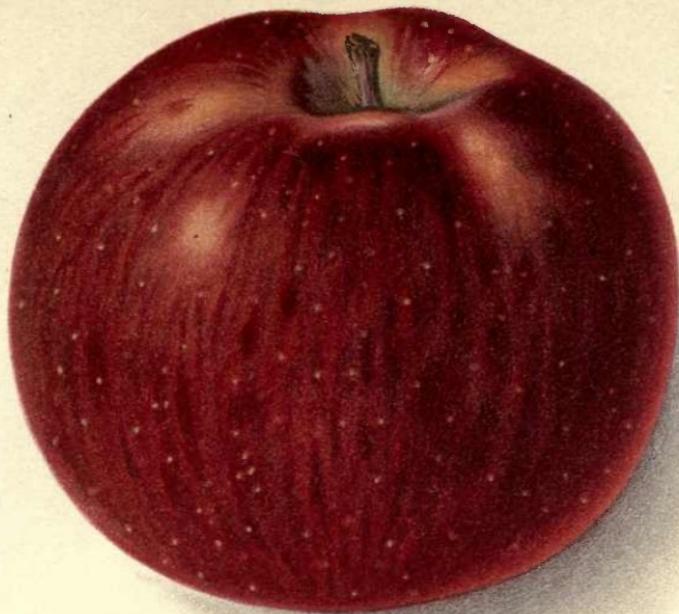


D.G. Passmore

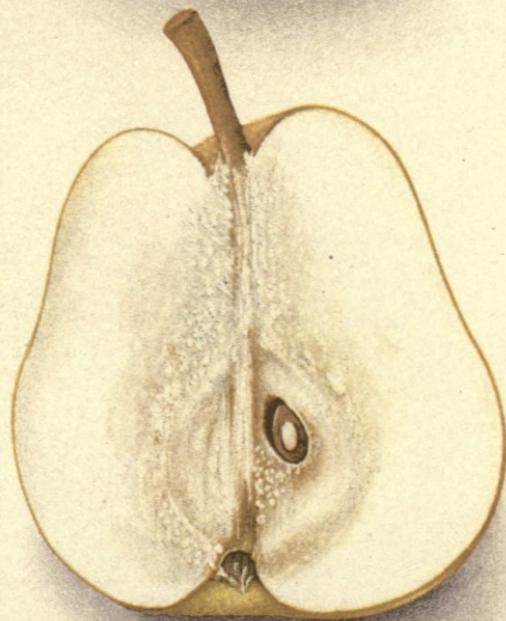
CORNELL APPLE



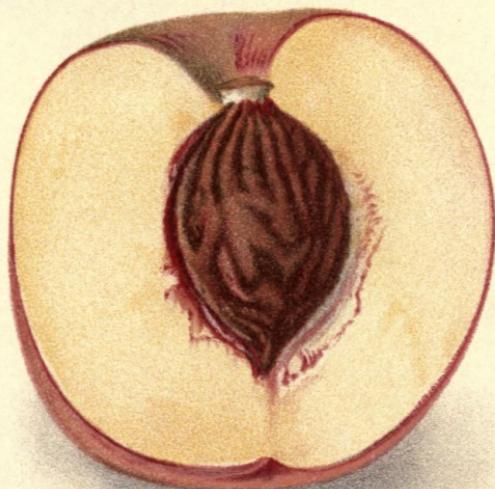
D. G. Passmore



E. I. Schutt.



D. G. Passmore



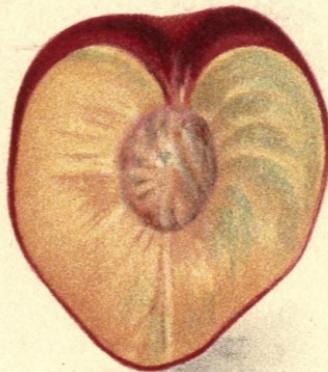
D.G. Passmore



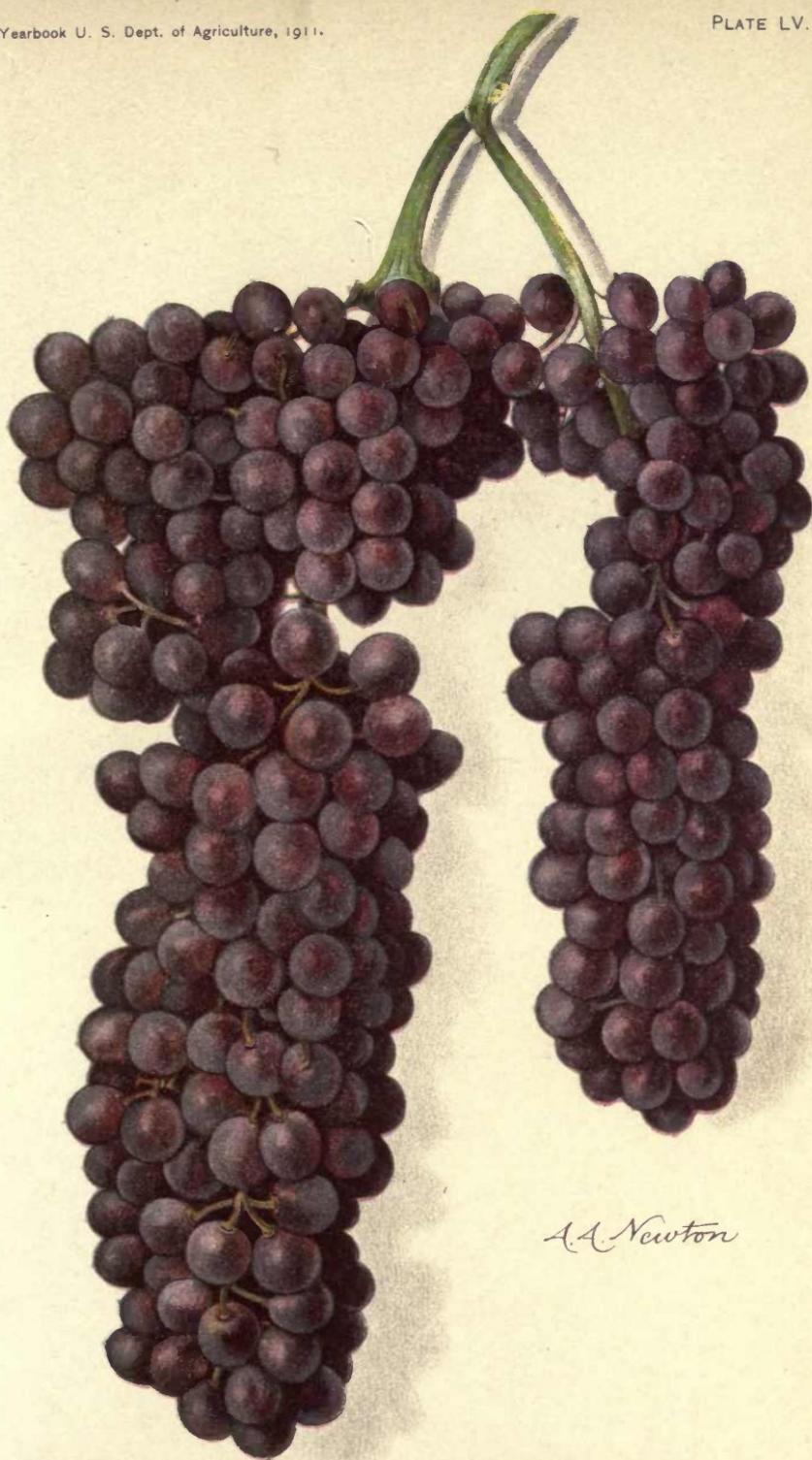
LAIRE



MONCETL



A. Newton



A.A. Newton

PANARITI GRAPE

resistance which the tree has shown thus far suggest the probability of its possessing considerable merit for the Middle West.

The specimen shown in Plate LII was grown by Mr. O. H. Ayer, Sibley, Douglas County, Kans.

RUSSELL PEACH.

SYNONYM: *Russell No. 1.*

[PLATE LIII.]

In the development of new peach varieties with a view to extending the culture of this fruit, especially in middle and northern latitudes, improvement along the line of increased hardiness offers, perhaps, a wider field for advancement than almost any other. Any variety which possesses merit as to dessert and shipping qualities, productivity, etc., and which can withstand without injury unusually low temperatures in winter or early spring is likely to prove an important factor in the peach industry as soon as its characteristics become generally known. The Russell peach appears to be a variety which possesses these qualities to a considerable degree.

EARLY HISTORY.

This variety originated at Wymore, Gage County, Nebr., about the year 1890, in an experimental seedling orchard belonging to J. M. Russell & Son, who at that time had a peach orchard of budded varieties at Wymore consisting of 65 acres.

The trees in the seedling orchard were produced from seeds selected from their best and hardiest varieties. The one in question grew from a seed of the Chili (*Hills Chili*) peach. Some of the characteristics of the tree and fruit are similar to the Alexander peach, and in view of the fact that a tree of that variety stood close to the Chili tree which produced the seed from which the Russell tree developed, there is some reason for supposing that it is a cross between these two varieties.

The first crop of fruit borne by this tree was in 1893, when it produced about 1 bushel.

This variety was originally designated as "Russell No. 1," and under this name it was briefly described by Mr. J. M. Russell in 1894.¹ Later, Messrs. Russell & Son developed the "Russell No. 2" and "Russell No. 3," but neither of these was disseminated to any extent.² Under the name "Russell" it was described in the report of the assistant pomologist in 1893.³ This report, however, was not published until some time during the year 1894.

¹ Annual Report, Nebraska State Horticultural Society, 1894, p. 116.

² Letter from J. M. Russell & Co., November, 1896.

³ Report of the Secretary of Agriculture, 1893, p. 291.

DESCRIPTION.

Form roundish; size medium to large; cavity regular, medium to large, deep, gradual; suture shallow except at cavity, extending from cavity to beyond the apex; apex a small point in the suture, in a slightly depressed basin; surface soft, velvety; color creamy white, blushed and splashed with crimson; down medium short, easily removed; skin thin, tender; flesh greenish white, with yellowish veins, tinged with red at stone, tender, melting, juicy; stone oval, free, small; flavor mild subacid, pleasant; quality good to very good; tree a rapid grower and an early and prolific bearer; glands globose. Season a month later than the Alexander peach, or about the middle of August, in southeast Nebraska.

This variety, though apparently not grown extensively, has become quite widely distributed in Nebraska, Iowa, and other middle western sections, where it is one of the most reliable bearers. It has proved to be one of the hardiest early freestone varieties, both in tree and bud, having endured with but slight injury winter temperatures which seriously damaged most other varieties.¹ The fruit, however, is said to be somewhat susceptible to brown-rot.

A late peach ripening in October, which originated at Lincoln, Ill., was introduced about the year 1894 under the name "Russell" and was distributed to some extent by a nursery located at that place. This variety does not appear to have become widely disseminated, and so far as known the name "Russell" as applied to this particular sort has been published only in the catalogues of the nursery company which disseminated it. That variety has not been propagated by this company since 1903.²

The specimen illustrated in Plate LIII was grown by Mr. F. O. Harrington, Williamsburg, Iowa County, Iowa.

LAIRE PLUM.

[PLATE LIV.]

EARLY HISTORY.

The Laire plum is a native variety which has gradually assumed much regional importance during the last few years. A recent investigation of the botanical status of this plum made by Mr. W. F. Wight, of the Bureau of Plant Industry, indicates that it is very closely related to *Prunus orthosepala* Koehne and may properly be considered a form of that species.

¹ Letter from Prof. R. F. Howard, Nebraska Agricultural Experiment Station, Dec. 11, 1911.

² Letter from Mr. W. E. Jones, December, 1911.

The Laire plum appears to have been brought into cultivation in the spring of 1876¹ by Mr. Abram Laire, living near Kirwin, Phillips County, Kans., and for whom it was named. It began fruiting two years after being brought in from the wild state. In a personal interview with Mr. Laire in September, 1910, he informed Mr. Wight that the original trees were obtained about 1878 or possibly a year or two later, the exact date apparently not being a matter of definite record. Mr. Laire, with his son, collected a number of young plum trees from various localities along Bow Creek. When these trees came into bearing there were about half a dozen which produced fruit of superior merit. The fruit of these trees was apparently the same, the trees probably all having developed as suckers from a single parent tree. This variety is the one to which the name "Laire" was subsequently applied.

The thicket from which these trees were obtained could not be re-located after they fruited, though Mr. Laire's son is inclined to think that they came from one which meanwhile had been destroyed by cattle.

DESCRIPTION.

Form roundish; size medium for a native variety; cavity regular, small, of medium depth, with gradual slope; stem short, very slender; suture very shallow, extending from cavity to apex; apex a small russet dot in a small basin at end of suture; surface smooth, glossy under bloom; color bright crimson yellow to dark red; dots numerous, russet; bloom profuse; skin thick, tenacious, slightly astringent; flesh yellow with whitish veins, meaty, juicy; stone roundish, cling, medium in size; flavor mild subacid, rich; quality good to very good; season September.

The Laire plum is a prolific bearer and is apparently especially well adapted to the central and western portions of Kansas and the corresponding regions of adjacent States. It was estimated in 1910 by Mr. E. Bartholomew that there were 100,000 trees of this plum growing in the northern central portion of Kansas.

That a fruit variety should have developed to so great a degree of importance in the region of its origin and remain largely unknown elsewhere is a rather remarkable occurrence in the recent annals of American pomology; that it represents, or is very closely related to, a species not recognized heretofore as possessing horticultural value is of interest, especially to those who are concerned in the amelioration of our native plums.

The specimen shown in Plate LIV was furnished by Mr. E. Bartholomew, of Stockton, Rooks County, Kans.

¹ Letter from Mr. E. Bartholomew, September, 1908.

MONCELT PLUM.

[PLATE LIV.]

EARLY HISTORY.

The Moncelt plum is a seedling of the "Red Nagate,"¹ a Japanese variety, and originated about 12 years ago on the grounds of R. Bates, Jackson, Aiken County, S. C. He considers² it a hybrid between "Red Nagate" and "Clyman," a "domestica" variety, but the botanical characters of the twigs and foliage, and of the fruit as well, appear to be those of the Japanese plum (*Prunus triflora*).

The original tree began bearing when 4 years old. As soon as its merits were apparent, the name by which it is designated was awaiting it, this having been previously selected by the originator to apply to the most promising variety in a lot of more than 17,000 seedlings of the "Red Nagate" which he was testing.

The name Moncelt was first published in a small catalogue issued by the originator in March, 1911, when the variety was commercially introduced.

DESCRIPTION.

Form conical; size large; cavity regular, large, deep, slope gradual, marked with slight furrows; suture of medium depth at cavity, becoming more shallow toward and extending to the apex; apex a russet dot at end of suture; surface smooth or slightly undulating, sometimes with small areas of russet; color yellow, blushed and marbled over nearly entire surface with dark purplish red; dots very numerous, very small, russet; bloom bluish white; skin medium thick, tenacious, slightly bitter; flesh yellowish, translucent, meaty, half tender, juicy; stone roundish oval, cling, very small; flavor subacid, pleasant; quality very good. Season from about the 10th of June to the end of that month, in the locality where it originated.

The tree is a strong, vigorous, upright grower, with rather large rank leaves. It is said to compare favorably with Abundance and Burbank in productiveness, and thus far it has been remarkably resistant to brown-rot and is said to suffer only to a limited extent from the plum curculio. It has exceptionally good keeping qualities after being picked from the tree and is regarded as a good shipping variety.

The characteristics of this variety, both in tree and fruit, appear to indicate that it is of special promise for southern latitudes. It is

¹ The exact identity of this variety is uncertain. Much confusion existed in the nomenclature of the Japanese plums in the earlier years following their introduction into this country. The name "Red Nagate" was applied to several different varieties, the most important of which is the one now known as Red June. Mr. Bates's tree, while similar in some respects, is said by him to be clearly distinct from Red June.

² Letters from Mr. R. Bates, October and November, 1911.

considered worthy of thorough test by those interested in plum growing in the South.

The specimen illustrated in Plate LIV was grown by the originator at Jackson, Aiken County, S. C.

PANARITI GRAPE.

[PLATE LV.]

The Panariti grape is one of the "currant" varieties, the fruit of which when cured constitutes the dried "currants" of commerce. Botanically this group of grapes belongs to *Vitis vinifera*, as do the other European varieties. They are largely grown in Greece and on some of the island possessions of that country, including Cephalonia and Zante. The principal districts on the mainland are in Morea, the ancient Peloponnesus. In these island and mainland districts nearly the entire population is engaged in and dependent on this industry.

The culture of these grapes in Greece has extended over many centuries. According to Eisen,¹ Pliny referred to them as early as 75 A. D. as being grown there, though they appear to have no further historical record for nearly a thousand years. Following the eleventh century, as indicated in Eisen's account, occasional reference is made to them in the old herbals and in other literature of the fourteenth, fifteenth, and sixteenth centuries, under such names as "reysyns de Corauntz," "Coraantz," "corent," "reysony of Corawnce," "raysns of Coren," and "currans." By gradual evolution the name "currant" appears to have developed from the name Corinth, the port whence the earlier supplies of this fruit reached western Europe. It appears evident that the name "currant" or "currantes" was applied to this type of grape, at least when dried, as early as 1578.

The common garden currants (*Ribes* species) do not appear to have come into cultivation until toward the close of the sixteenth century. So far as historical records show, the dried fruit of the "currant" grape had then been an article of commerce in some of the European markets for several centuries, so that there seems to be no reason to doubt that the name currant was applied to the genus *Ribes* because of the resemblance which its racemes of fruit bore to clusters of the "grape of Corinth."

The importance of the currant grape not only to very large numbers of the peasant population of Greece, but to the Government as well, forms an example which is probably without parallel elsewhere in the world. The part taken by the Government in recent years in maintaining the stability of this industry through control of a portion of the crop is equally remarkable.

¹ Eisen, Gustav. *The Raisin Industry*, 1890, p. 6.

Following the destruction of the vineyards in France by the phylloxera, about 1880 to 1890, there developed in that country a heavy demand for the dried currants of Greece for use in making wines, brandies, etc. This resulted in high prices for the fruit and, consequently, a very large increase in the acreage devoted to grape culture in Greece. In fact, it is stated¹ that the desire to extend currant-grape culture became so great in many instances that large orchards of mature olive trees were sacrificed to this end, as well as many mulberry trees that had been grown to furnish food for silkworms. Thus, in some regions grape culture became the sole industry.

The introduction into France of grape stocks from the United States which were resistant to phylloxera and the rehabilitation of the grape industry, followed by the imposing in 1896 of import taxes which practically excluded the currant grapes of Greece from France, caused a great crisis in this industry in Greece. Large regions were dependent upon grape culture as a means of support. With the French markets, which had previously taken great quantities of currants, virtually closed, the production was far in excess of the demand.

At this juncture the Greek Parliament passed, in 1895, the "parakratesis" or "retention" act, the object of which was to so control the output of currants each year as to prevent, so far as possible, overstocking the markets, and thus to maintain satisfactory prices.

In its operation this law imposes upon every producer a tax of 15 per cent of the product which he exports, payable either in money or by depositing in Government warehouses the required quantity of currants. Thus, only 85 per cent of the crop of any one year, or its equivalent in value so far as the producer is concerned, can be put upon the market. The currants received by the Government must be used for other purposes than those to which this commodity is usually put.

In connection with the passing of the "retention act" the matter of establishing a "currant bank" of Greece was much agitated, the object in view being to provide a source from which every producer who deposits a certain quantity of currants in a Government depot or warehouse should be entitled to draw money from the bank, or to hypothecate his crop. Such a bank, however, was not established until 1899, when with the Government proceeds from the sale of currants to distillers, etc., it was formed with a capital of 3,500,000 drachmas (about \$675,500).

The currant has long been the leading commodity of export from Greece. The tax of 15 per cent of the crop exported forms one of the principal sources of revenue for the Government; at the same

¹ Horton, George. The Currant Trade of Greece. United States Consular Reports, vol. 50, pp. 243-245.

time the diverting of that proportion of the crop each year from the ordinary channels of commerce doubtless has, in some seasons at least, a material effect upon the market price received for the exported product.

Currant grapes were apparently introduced into some of the Vinifera districts of California as early as 1861,¹ but they have not yet attained commercial importance there. Imports into the United States in 1910 totaled more than 33,000,000 pounds of currants, having an approximate value of \$1,178,750. The imports of currants during that year from all other countries were less than 250,000 pounds.²

EARLY HISTORY OF THE PANARITI GRAPE IN THE UNITED STATES.

The history of the Panariti grape in the United States dates from the receipt from Panariti, Greece, through Mr. David Fairchild, agricultural explorer of this department, of a shipment of cuttings which reached Washington May 9, 1901. Concerning this grape Mr. Fairchild states:³

The variety of grapes producing the *currants* or *corinths* of commerce. These cuttings were purchased in the village of Panariti, which lies among the mountains back of Xyloncastron. This village is noted for producing some of the finest corinths in Greece.

Several varieties of currant grapes are grown in Greece, though the crop differences are not distinguished in that country by varietal names, but by the name of the regions in which they are produced; thus, Panariti grapes are grapes grown in the vicinity of the village of Panariti.

Soon after the importation of cuttings was received at the department they were distributed among grape growers in representative Vinifera grape-growing districts in California, Arizona, and southern Nevada. More recently the variety has been more widely disseminated in connection with the viticultural investigations of the Bureau of Plant Industry.

DESCRIPTION.⁴

Bunch very long, almost cylindrical but tapering, with quite an enlargement toward end of bunch, often shouldered, straggling, loose; stem $1\frac{1}{2}$ to 2 inches long, of medium size, soft and fleshy; berry round, very small, not averaging much over one-fourth of an inch in diameter; surface smooth; color amber with whitish bloom; skin rather

¹ Elsen, Gustav. The Raisin Industry, 1890, p. 38.

² Bulletin 90, Bureau of Statistics, entitled "Imports of Farm and Forest Products, 1908-1910," p. 42.

³ Bulletin 66, Bureau of Plant Industry, entitled "Seeds and Plants Imported during the Period from September, 1900, to December, 1903, Inventory No. 10." p. 84, No. 6429.

⁴ Description furnished by Mr. George C. Husmann, Pomologist in Charge of Viticultural Investigations, Bureau of Plant Industry.

thin; flesh white, soft, fairly juicy; flavor sweet with the characteristic flavor strongly developed. Season early August at Fresno. Its chief value will doubtless be for drying. Wood light brownish green, somewhat striped, with internodes 3 to 4 inches in length; rather slender. In the first crop, which is the only one of real value, the berries are seedless, but the second and third crop grapes contain some seeds.

The question of the most suitable resistant stocks for this grape, as well as the methods of pruning, training, and other cultural operations, is being investigated at the cooperative experiment vineyard maintained by the Bureau of Plant Industry at Fresno, Cal. Indications at present suggest that the matter of stocks may be of much importance.

Cultural methods also call for careful consideration in any development of the currant industry that may occur in this country. For instance, in Greece it is a common though not universal practice to girdle the vines to increase productiveness. It is understood that in Australia girdling is the usual practice, as light crops are habitual unless this is done. Whether this method or some modified form of it can be effectively or advantageously adopted in this country is as yet undetermined.

The adaptability of this variety to successful culture, in at least some of the Vinifera grape districts of California, appears to have been demonstrated. Some of the grape growers are already becoming interested in it and it seems probable that in the near future the production of it will become of considerable commercial importance in the Vinifera grape districts in this country.

Ripening early, as it does, before most other varieties mature, the fruit can be handled advantageously with the same vineyard crews that are required later for harvesting the wine and table grapes. As the ripening time in California is during the rainless period, when the climatic conditions are the most favorable for drying the fruit, there is everything to encourage its planting by those desirous of producing currants.

The cluster illustrated in Plate LV was grown at the cooperative experiment vineyard, Fresno, Fresno County, Cal.

THOMSON ORANGE.

SYNONYMS: *Thomson's Navel*, *Thomson's Improved Navel*, *Thompson*, *Thompson Improved*, *Thompson's Improved Navel*.

[PLATE LVI.]

One of the remarkable features of the orange industry of California is the fact that it has been built up so largely on a single variety, the Washington Navel¹ or "Bahia," which was introduced into that

¹ For a concise history of this variety, see Bulletin 123, Bureau of Plant Industry, entitled "The Decay of Oranges while in Transit from California," p. 9.

State from Brazil by the United States Department of Agriculture less than 40 years ago. The shipments of oranges from California for the crop year 1910-11 amounted approximately to 39,500 cars. Of these three-fourths are estimated to have been of the Washington Navel variety.

In view of the large production of this variety and the high esteem in which it has been held for 30 years or more, it appears strange that no seedlings of it have yet attained the distinction of commercial introduction in our orange districts. This is doubtless in large part due to the rarity of seeds in its fruit when grown under ordinary orchard conditions. In recent years there have appeared in the California orange districts several well-authenticated bud sports or variations, one or two of which have been planted commercially to some extent, the Golden Buckeye being an example.

Of less certain origin but more important commercially than the above-named variety is the Thomson, which was disseminated by the late A. C. Thomson, of Duarte, Los Angeles County, Cal., about 1891.¹ The published accounts of the origin of the variety are conflicting. The first statement² was to the effect that it was an improvement on the Washington Navel accomplished by budding that variety on a St. Michael stock, then budding from this tree on a Mediterranean Sweet stock, thus securing the cumulative effect of the two stocks upon the Washington Navel. The statement was received with much incredulity by the horticultural public and three years later the introducer published in the Pacific Rural Press³ an account in which it was implied that the variety was produced by "split-bud" propagation but without details as to what varieties had been used as the parents. At the same time he submitted to the editor specimen buds prepared to illustrate the method which he had described.

The inadequacy of the evidence submitted and the well-known tendency of the Washington Navel orange to produce bud sports has resulted in a firm conviction in the minds of many orange growers that the Thomson in fact originated as a bud sport rather than through any special process or expert manipulation of buds.

The exceptional beauty and attractiveness of the fruit aroused much interest among growers, which was accentuated by the award of a first premium to the variety when it was exhibited at the Columbian Exposition in Chicago in 1893. Considerable plantings of it are now found throughout southern California and some in other orange-growing sections. As a dessert fruit it is not equal to the parent variety, lacking in juiciness and sprightliness of flavor.

¹ California Fruit Grower and Fruit Trade Review, vol. 8, No. 14, Apr. 4, 1891, p. 211, and No. 19, May 9, 1891, p. 290.

² Azusa Pomotropic, Mar. 19, 1891, p. 7.

³ Pacific Rural Press, vol. 47, no. 23, June 9, 1894, p. 433.

DESCRIPTION.

Form slightly oblong; size above medium to large; cavity small, furrowed; apex, navel markings either small or quite prominent; surface smooth or slightly undulating; sometimes very shallow, longitudinal furrows; stem slender; color pale orange yellow, reddening somewhat after picking, but usually not as richly colored as the Washington Navel; oil cells numerous, small, indented or even with surface; rind relatively smooth, rather closely adherent, usually thin and rather tender; segments 10 to 12, irregular in size with open center; flesh, rich yellow to deep orange in color, translucent, moderately tender; cells small, regular, enveloping tissue thin; juice translucent, not very abundant; seedless; flavor sweet, sprightly, pleasant; quality good, but not equal to the Washington Navel when the latter is well grown. Its shipping season is about the same as that of the Washington Navel, but it reaches full maturity about one month earlier than that variety. The satiny surface and bright color give the variety special popularity for certain trade in the large cities, where appearance rather than quality determines demand and value. The tree characteristics of the Thomson are quite similar to the Washington Navel. It is reported by Shamel¹ to be quite subject to "sporting," numerous branches on Thomson trees yielding fairly typical Washington Navel fruits. It is reported to succeed well in Arizona and has recently been reported² as doing well in Algeria under conditions to which the Washington Navel orange does not appear to be well adapted.

The specimen illustrated in Plate LVI was grown at Riverside, Cal.

¹ Letter from Mr. A. D. Shamel, February, 1912.

² Letter from Mr. Walter T. Swingle, December, 1911.

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PROMISING NEW FRUITS.

BY

WILLIAM A. TAYLOR,

Pomologist and Chief.

AND

H. P. GOULD,

*Pomologist in Charge of Fruit District Investigations,
Bureau of Plant Industry.*

[FROM YEARBOOK OF DEPARTMENT OF AGRICULTURE FOR 1912.]

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PROMISING NEW FRUITS.

By WILLIAM A. TAYLOR, *Pomologist and Chief*, and H. P. GOULD, *Pomologist in Charge of Fruit District Investigations, Bureau of Plant Industry.*

INTRODUCTION.

This paper is the twelfth in a series which was begun in the Yearbook for 1901. The primary object throughout the series has been to discuss fruit varieties that are little known among fruit growers, but which are believed to possess qualities that make them inherently valuable in their places of origin and worthy of testing elsewhere.

The "variety problem" is one that is ever before the grower who views the fruit industry either from the standpoint of the student or that of the business-man. In the last analysis commercial fruit growing, to be permanently successful, must be considered from both of these standpoints. In one form or another the variety question has long been prominent in the minds of those interested in the production of fruit in the United States and Canada. Reference to the earlier proceedings of the American Pomological Society discloses the fact that for many years its meetings were devoted largely to discussion of the relative merit of different varieties for the various sections of the country. The "fruit lists" of varieties recommended for planting which resulted from these discussions and the work of committees appointed to give the matter more systematic consideration have been a potent influence for good in the development of the fruit industry of the country.

As the business aspects of fruit growing receive more definite recognition varieties will be planted more and more to meet particular conditions and for special rather than for general purposes. For instance, under present conditions one of the most important requirements of a winter apple in many sections is that it have good cold-storage qualities, and a variety may be selected for commercial planting or discarded on account of its behavior in this one particular. Again, summer apples were, for a considerable period, a very minor consideration commercially, but within the past 10 or 15 years there has developed an important demand in the eastern markets for this class of fruit. This has greatly stimulated the planting of early apple varieties in many sections where formerly they were little valued.

Such changes in conditions as have been mentioned necessarily have an important bearing on the question of varieties, and their influence must continue until the attainable degree of perfection in varieties to meet the more important demands is reached. Moreover, in the case of such fruits as the avocado, the mango, and some others, the commercial culture of which is comparatively new, there are as yet but few varieties in cultivation in this country. As the market demand for these newer fruits increases and their culture becomes of greater commercial importance, new and better varieties or varieties better adapted to commercial needs will in all probability be developed.

The Department of Agriculture has no stock for dissemination of any of the varieties referred to in this paper.

EASTMAN APPLE.

SYNONYMS: *Fameuse Seedling*, *Fameuse No. 1*, *Patten's Fameuse*.

[PLATE I.]

EARLY HISTORY.

The pioneer attempts at fruit growing in northern Iowa early demonstrated that the varieties with which the early settlers were familiar in their old homes in the East were not hardy enough to withstand the dry, cold winters characteristic of a large portion of the upper Mississippi Valley.

The Eastman apple is of interest in pomology not only because of its merit as a variety, but because it is one of the results of a definitely planned effort to develop varieties adapted to the peculiar needs of this region. It originated at Charles City, Iowa, from a seed of a *Fameuse* apple which was planted in the spring of 1874 by Mr. Charles G. Patten. The pollen parent of the Eastman is unknown, but the apple from which the seed was obtained grew in Mr. Patten's orchard at Charles City, where there were also growing trees of the *St. Lawrence*, *Oldenburg*, and *Wealthy* apples. The Eastman is, therefore, probably a cross between the *Fameuse* and one of these varieties.¹

This variety was first offered to the trade in the spring of 1884, and the synonyms named above were used at various times by Mr. Patten in his catalogues. But, as none of these names seemed to be suitable, he subsequently applied the name "Eastman" in honor of Mr. P. S. Eastman, formerly of Iowa but now residing at Berkeley, Cal., who supplied the *Oldenburg* apple from a seed of which the Patten² (*Patten Greening*) apple originated.

¹ Letters from Mr. Charles G. Patten, October and November, 1912.

² For description and illustration, see Yearbook, U. S. Dept. of Agriculture, for 1908, p. 474.

The tree makes a strong, vigorous, spreading growth and is conceded to be decidedly more hardy than its parent, the Fameuse, and equal in hardiness to the Wealthy. It has proved to be a remarkably early, regular, and prolific bearer. For some years it has been giving good satisfaction in central Iowa, as well as in various sections of Minnesota. It seems to do well in the Bayfield Peninsula region of Wisconsin, and Mr. Eastman has recently fruited it at Berkeley, Cal., where it is considered by him to be a promising variety.

The original tree became weakened by mechanical injuries and was cut down in 1910, though still bearing fruit.

DESCRIPTION.¹

Form roundish, slightly truncate, sides often unequal; size large; cavity regular, large, deep, slope gradual, somewhat russeted; stem of medium length, rather slender; basin irregular, very large, deep, slope abrupt, furrowed; calyx small, closed; eye small, funnel form; surface smooth except indistinct ribbing; color pale yellow, heavily washed with delicate bright red in highly colored specimens and marked with broken stripes and splashes of light carmine; dots numerous, small; flesh whitish; texture rather coarse, tender, moderately juicy; core roundish conic, clasping the long calyx tube, size medium, slightly open; seeds few, plump, medium size, color rich brown; flavor mild subacid, moderately rich, pleasant; quality good. Season in locality of origin, late fall, ripening just after the Wealthy apple.

The specimen illustrated in Plate I was grown by the originator at Charles City, Floyd County, Iowa, in 1912.

MONOCACY APPLE.

SYNONYMS: *Hoop*, *Baumgardner*, *Bill Baumgardner*, *Smith*.

[PLATE II.]

EARLY HISTORY.

The Monocacy apple is one of many examples of fruit varieties that apparently possess great potential possibilities and have long been grown in very restricted regions, where they are highly esteemed, but which remain quite unknown to fruit growers generally.

The history of this variety as recalled by Mr. Frederick Dorcus, of Carroll County, Md., who is now 81 years of age, supplied in the present connection by Mr. Jesse P. Weybright,² also of Carroll

¹ The varietal descriptions of the Eastman and Summer King apples, the Chesapeake strawberry, and the Pollock avocado used in this paper are based on data in the Office of Pomological Collections, Bureau of Plant Industry.

² Letters from Mr. Weybright, September and November, 1912.

County, is substantially as follows, the account of the original tree beginning with the year 1849, when Mr. Dorcus remembers eating apples which it produced:

The tree stood on a farm owned by Mr. William Baumgardner, which was located on the Monocacy River, in Carroll County, at the mouth of Piney Creek and about 7 miles southwest of Taneytown. This farm is now owned by Mr. Aaron Veant.¹

The tree was considered a wilding and the fruit was so hard in the fall that it was not usually gathered. About Christmas time, however, during these early years, Mr. Dorcus would go to the tree, secure the frozen apples, and, after thawing them, would eat them.

Apparently this variety came into local prominence about 1859 or 1860 through a Mr. Seiss, who lived in a tenant house on the "Baumgardner farm" and who helped pick the apples. When the crop was harvested that fall, the fruit on this tree being left untouched, as was the usual practice, Mr. Seiss obtained the permission of Mr. Baumgardner to gather it for himself. This he did, picking 30 bushels, which he took home and buried in a pit. He kept them in this manner till late the following spring after the apples of everyone else were all gone. At this season they were of such high quality that they attracted much attention and apparently created considerable local excitement.

At about this time (1859 or 1860) Abram and Isaac Furney were growing nursery trees near Taneytown, Carroll County. They grafted a considerable number of trees of this variety, and these became known locally as the "Hoop" apple. Apparently these were the first trees of the variety to be propagated in a nursery.

Recollection as to the location of the original tree differs somewhat. Mr. Dorcus recalls it as being in a field near a ravine, standing apart from any other trees, while others say that it stood in the orchard on the Baumgardner farm; but as to the more important features, this account appears to be well authenticated.

There is another account² of this variety which locates the original tree about one-half mile from Woodsboro, Frederick County, Md., on a farm owned at the time by the late George Livingston Smith. When Mr. Smith gathered his apples in the fall of 1865 he was attracted by this particular variety, which apparently had remained unnoticed in previous years. It is stated that after due effort had been made to ascertain the name of the variety without success he called it the "Smith" apple. This name is still applied to this variety in some localities in Frederick County.

¹ Letter from Mr. Veant, November, 1912.

² Letters from Mr. D. A. Sharett, October, 1912; also from Mr. Charles E. Klein, November, 1912.

As the "Smith farm," near Woodsboro, is but 9 or 10 miles distant from the "Baumgardner place," referred to in the earlier account, the occurrence of a tree or trees of the variety of fruiting age at Woodsboro as early as 1865 is not difficult of satisfactory explanation.

As already indicated, the names "Smith" and "Hoop" are applied locally to this apple; in other localities it is still known as the "Baumgardner" or "Bill Baumgardner" apple. The name "Monocacy," so far as known, was first suggested for this variety in 1897 by Mr. J. A. Ramsburg,¹ of Frederick, Md. The identity of the variety was then apparently unknown to him, and because of the fact that it originated near and for many years had been considerably grown at points in the vicinity of the Monocacy River this name seemed to be an appropriate one. In recent years the name "Monocacy" has become more widely known than any one of the others, the variety having been commercially propagated and disseminated under this designation. So far as known, the other names, though in use locally for many years before the name "Monocacy" was suggested, have not previously been published in connection with the variety.

Though this variety has become somewhat more widely distributed in recent years, it remains very largely unknown except in the northeastern portion of Frederick and the western part of Carroll County, Md. It is to be found in many small home orchards in this region, where in most cases its distribution has been by means of scions top-worked into trees of bearing age.

The original tree died some years ago, having become greatly weakened, it is said, from the excessive cutting of scions from it.

DESCRIPTION.

Form roundish, some specimens slightly oblate conic, sometimes slightly ribbed; size medium to large; cavity regular, medium to large, rather deep, slope abrupt, sometimes slightly russeted, but without markings in the majority of specimens; stem short, rather slender; basin regular, medium in size and depth, slope gradual, some leather cracking, slightly furrowed; calyx segments medium to large, converging; eye rather large, closed or nearly so; surface smooth; color yellowish green, almost entirely overspread with dark crimson, shading to a purplish crimson in very highly colored specimens, splashed and striped with darker crimson, with an overspread of mottled gray in many specimens; dots yellowish white, rather numerous, increasing in numbers toward the apex, rather large and conspicuous; skin moderately thick, tenacious, and firm; flesh yellowish white, sometimes slightly tinted with red; texture moderately fine grained, juicy; core large, oblate, clasping, closed or par-

¹ Letter from Mr. Ramsburg, October, 1897.

tially open; carpels rather small, nearly circular; seeds numerous, of medium size, plump, rich dark brown; flavor mild, subacid, pleasant, moderately rich; quality good to very good. It is prized by those who know the variety best both for culinary and dessert purposes. Season, winter, keeping till late winter and sometimes well into the spring in the region in Maryland in which it is most largely grown. It is reported to be an excellent variety for cold storage.

The tree attains only moderate size, but is vigorous and healthy; the wood is very tough; limbs not easily broken by heavy crops. It is said to bear young, frequently fruiting at from 4 to 6 years of age, and to be a long-lived tree and a heavy, regular bearer.

The universal esteem in which the Monocacy apple is held in the region in which it is best known indicates an apple of much merit. Though its color may be a little dark, it is attractive in appearance and its quality is sufficiently high to give it value. It is considered worthy of extended trial, especially in middle latitudes.

The specimen illustrated in Plate II was grown by Mr. Edward Shorb, Keymar, Carroll County, Md., in 1912.

SUMMER KING APPLE.

SYNONYMS: *Kentucky Summer Queen, Bounty.*

[PLATE III.]

EARLY HISTORY.

The early history of the Summer King apple is obscure. It appears to have been a relatively prominent variety in Warren County, Ky., during the middle of the last century, where it is supposed to have been introduced by the early settlers from North Carolina about 1810 or 1815. More definite records regarding its origin are wanting. It seems never to have become much known in North Carolina, and at the present time it is very rarely found in that State.

It was introduced into eastern Kansas about 1860, but it appears not to have become of commercial importance in that region. More recently it has been grown to a limited extent in Maryland, where it is very highly esteemed. It has also been received at the Department of Agriculture from Tennessee and New Jersey, but the variety is unknown to most fruit growers. It is said to have been known in Kentucky in the earlier years under the name of "King," but to distinguish it from other varieties having that name the prefix "Summer" was added by the late Dr. William M. Howsley,¹ of Kansas.

¹ Manuscript notes of the late Charles Downing.

DESCRIPTION.

Form roundish; size medium to large; cavity regular, of medium size and depth, slope gradual, with russet markings; stem short, stout; basin regular, small, of medium depth, slope gradual, sometimes slightly furrowed; calyx segments rather short, wide, converging; eye small, closed; surface smooth; color greenish yellow, washed and marbled with mixed red and broken stripes of crimson and overspread of gray; dots numerous, rather conspicuous, yellowish or light gray, sometimes russet; skin moderately thick, tenacious; flesh whitish yellow, fine grained, tender, juicy; core oblate conic to roundish conic, large, clasping, partially open; seeds few as a rule, plump, large, color light brown; flavor mild, pleasant subacid; quality good to very good. Season, early August in eastern Maryland, continuing for two or three weeks.

The tree makes a thrifty, straight growth in the nursery and forms an upright, round, symmetrical head in the orchard. It comes into bearing early and is considered productive.¹

On account of the beauty and high quality of this variety and the productiveness of the tree it is apparently worthy of a more prominent place in the early-apple industry of middle latitudes and the South than it holds at the present time.

The specimen illustrated in Plate III was received through Mr. J. W. Kerr, Denton, Caroline County, Md., in 1912.

DOUGLAS PEAR.

[PLATE IV.]

EARLY HISTORY.

The Douglas pear originated with Mr. O. H. Ayer, near Lawrence, Douglas County, Kans., as did the Ayer pear.² The exact year of its origin is not a matter of definite record, though it was about 1897. It came from a seed of the Kieffer pear and is supposed to be a hybrid between that variety and the Angouleme (*Duchesse d'Angouleme*). It first fruited in 1902. During that season the fruit was exhibited before the local county horticultural society, where it attracted the attention of Mr. A. H. Griesa, of Lawrence, who later that same season made an examination of the tree. It was then standing in a much overcrowded row of seedling pear trees and was the only one of the entire collection to fruit that year. The general appearance of the tree, the character of the foliage, and

¹ Letter from Mr. J. W. Kerr, November, 1912.

² For description of the Ayer pear, see Yearbook, U. S. Dept. of Agriculture, for 1911, p. 428.

the buds were especially good, and Mr. Griesa at once became interested in it. It was at his suggestion that the name "Douglas," the county in which it originated, was applied to it. Though it has been known locally for several years by this name, the latter does not appear to have been published until it appeared in a leaflet issued by Mr. Griesa in 1910. The variety was first propagated by him in 1907, but not disseminated until 1911.

In growth the tree is said to resemble the Angouleme. Thus far, in the region in which it originated it has been entirely free from blight, though other pear trees in the same locality have blighted seriously. Bearing begins remarkably early; trees 2 and 3 years old frequently producing some fruit. It blossoms a few days later than the Kieffer, or about with the Angouleme. The original tree is still in good thrifty condition.¹

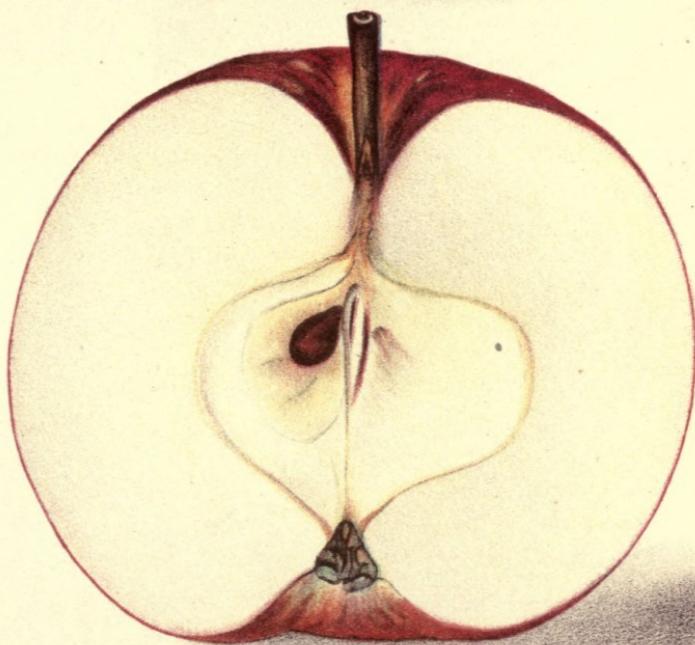
DESCRIPTION.

Form obovate or roundish obovate; size medium to large; cavity regular, medium to large, depth medium, slope gradual, slightly russeted; stem very long, rather slender; basin slightly irregular, medium in size; rather shallow, slope gradual, slightly ribbed; calyx segments short, fleshy, converging; eye medium, open or partially closed; surface smooth except where slight undulations occur, sometimes slightly russeted in small patches; color yellow, characteristically blotched and mottled with small irregular scarlet markings on the exposed side, dots numerous, in many cases appearing as minute russeted spots; skin thin; core oval, clasping, rather large, closed; seeds of medium size, not very plump, dark brown; flesh whitish or greenish white, moderately fine grained, melting, very juicy, with occasional coarse granules in the flesh; flavor subacid, with slight astringency; quality good; season about with the Kieffer or a little earlier—from the first to the middle of October in the locality of its origin.

Though this variety does not rate as high in flavor and dessert quality as many varieties, it is distinctly better than the Kieffer and is particularly attractive in appearance. The vigor and healthfulness of the tree, and especially its freedom from blight, make it a promising new variety and one that should be widely tested.

The specimen illustrated in Plate IV was grown by Mr. A. H. Griesa, Lawrence, Douglas County, Kans., in 1912.

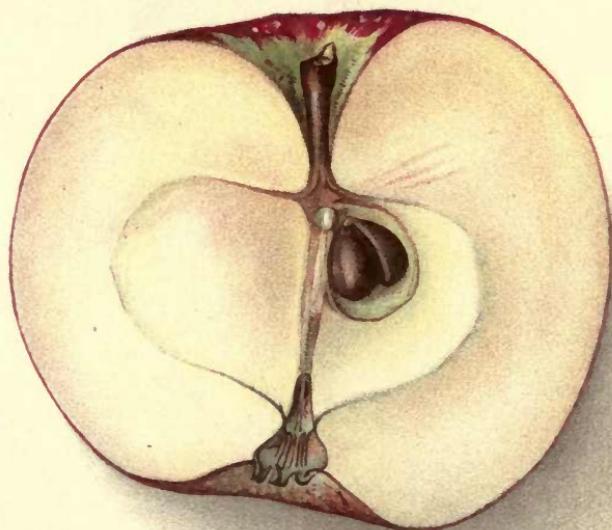
¹ Letter from Mr. A. H. Griesa, May, 1912.



EASTMAN APPLE.

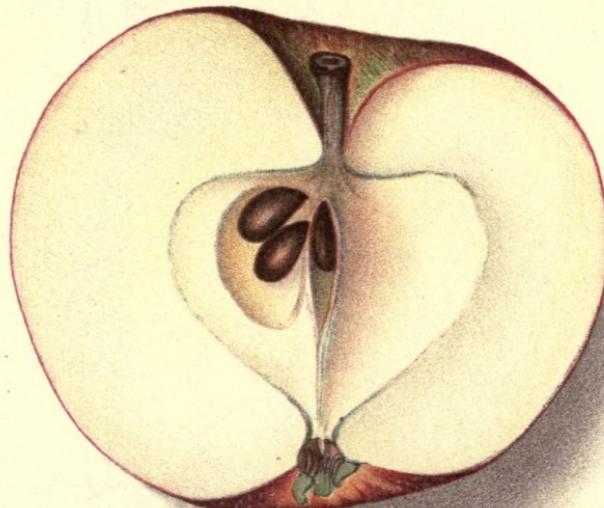
Mary D. Arnold

JULIUS BIEN CO. LITH. N.Y.



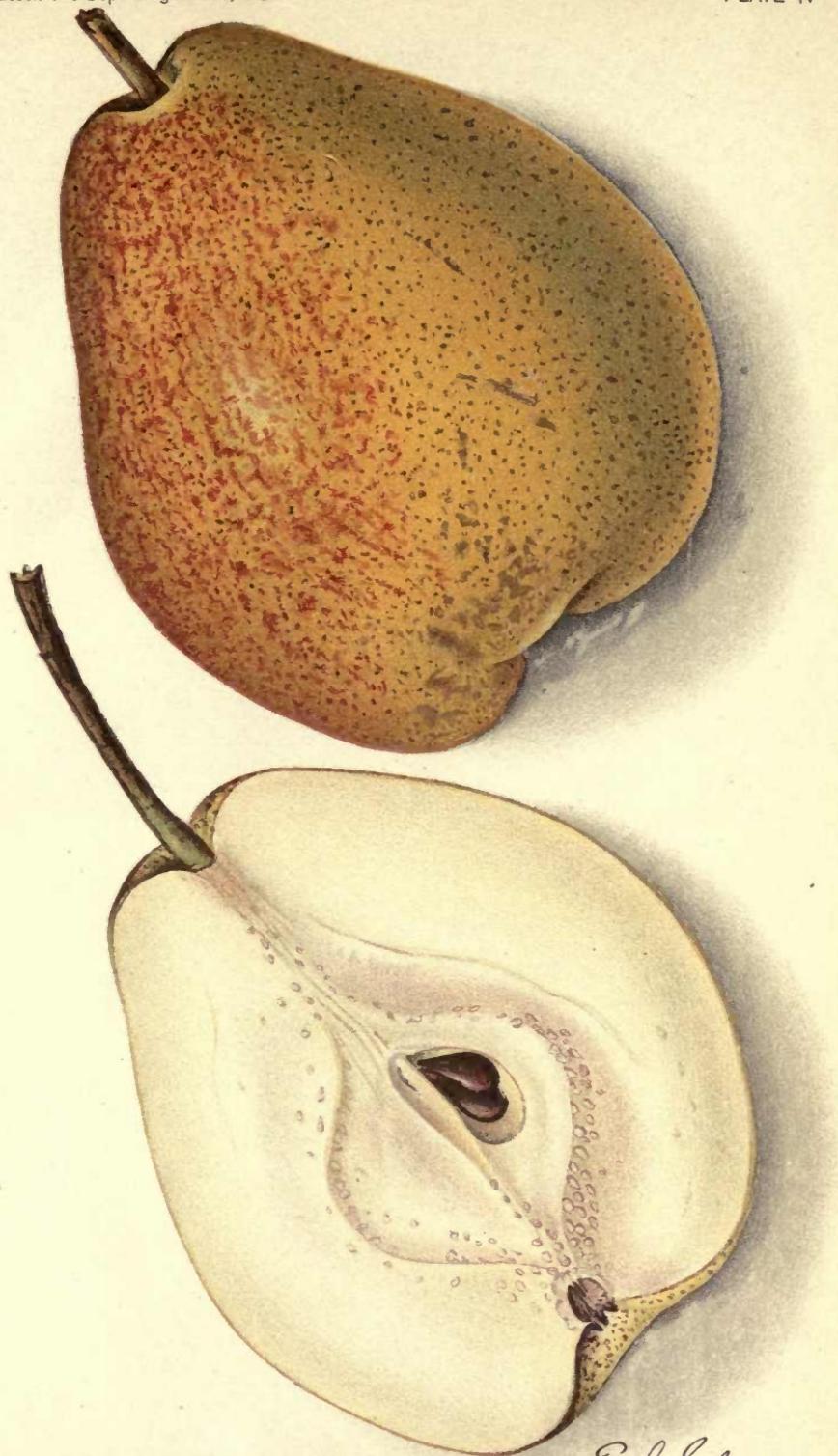
E. J. Schutt.

MONOCACY APPLE.



E. J. Schutt.

SUMMER KING APPLE.



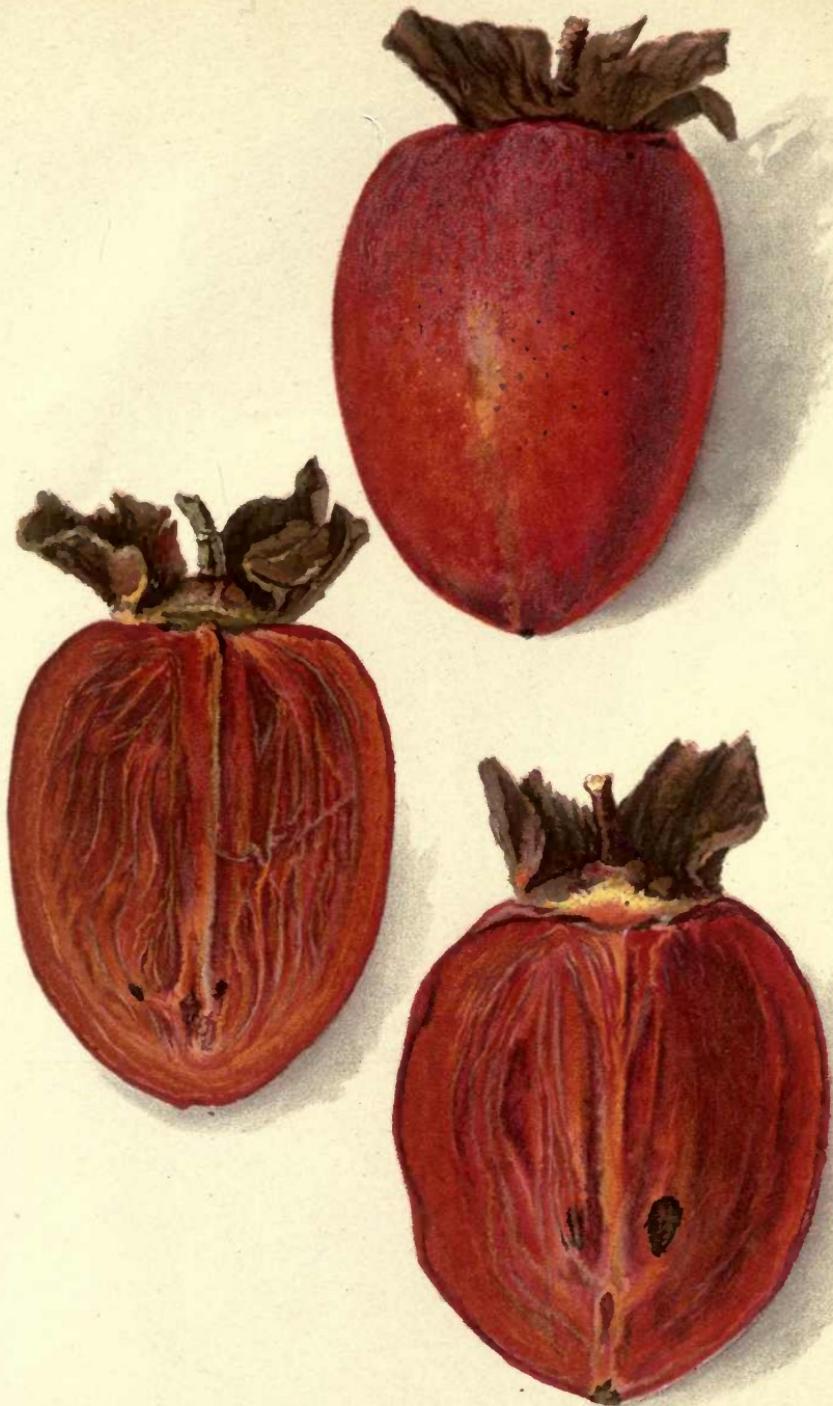
DOUGLAS PEAR.

E. L. Schutt.

JULIUS BIER CO. LITH. N.Y.

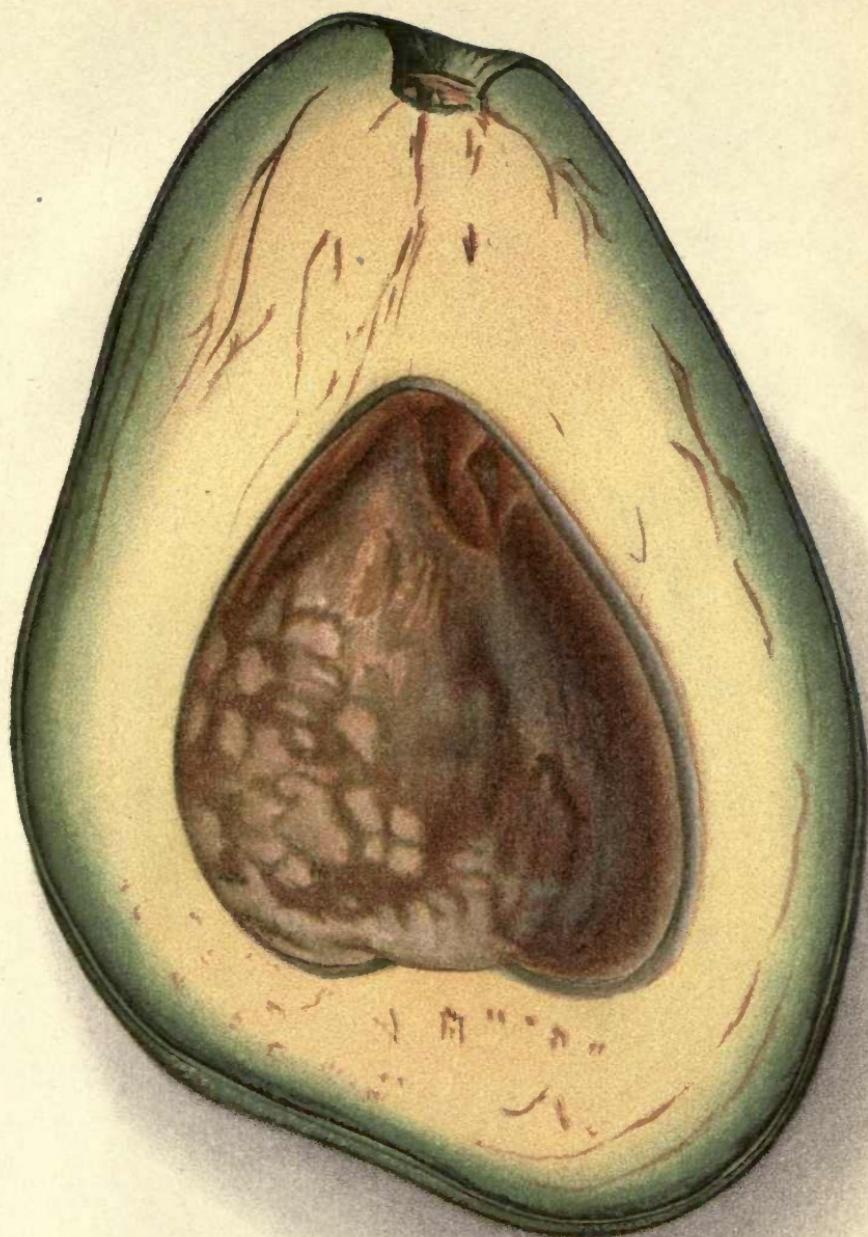


CHESAPEAKE STRAWBERRY.



ORMOND PERSIMMON.

A. A. Norton.



POLLOCK AVOCADO.

E. L. Schutt.



HAVENS

E. L. Schutt.

MAJOR, BURKETT, WARRICK, HAVENS, AND OWENS PECANS.

CHESAPEAKE STRAWBERRY.

[PLATE V.]

EARLY HISTORY.

The Chesapeake strawberry originated as a chance seedling of unknown parentage with Mr. George W. Parks, of Nanticoke, Wicomico County, Md. The site of its origin was on Nanticoke Point, within a short distance of Chesapeake Bay; hence its name, which was selected by the introducer and first published in 1906, when the variety was originally offered to the trade.¹

The plants are vigorous, with thick, leathery, healthy foliage, which is borne on upright leafstalks. The plant is not prolific of runners, but under most conditions enough so for fruiting purposes. The blossoms are perfect; the flower trusses rather short but erect. It sets only a moderate quantity of fruit, but the tendency for every berry that forms to develop into a perfect specimen is exceptionally strong. No marked soil preferences are thus far indicated, as it appears to do well on nearly all types that are suitable for the growing of the well-known varieties of strawberries.

DESCRIPTION.

Form roundish conic, often with wedge-shaped apex; size quite uniformly large; stem 1½ to 3 inches long, rather stout; calyx dark green, of medium size; sepals 10 to 16, rather closely adherent; apex regular, usually ripening uniformly; surface glossy; color rich crimson, durable; seeds regularly placed, numerous, medium to large, rather conspicuous, projecting slightly above the surface; flesh light red or crimson; texture meaty, tender, but firm; usually solid, but sometimes showing slight cavities in the center, juicy; shipping quality excellent; flavor rich, subacid, nearly sweet; aroma very pleasant; quality very good. Season late, beginning to ripen three or four days in advance of Gandy, which for many years has been very widely planted as the leading late commercial variety in the Middle Atlantic States.

The Chesapeake strawberry has been planted in many sections since it was introduced, and apparently with quite uniformly satisfactory results. It appears to be one of the most valuable of the newer varieties.

The specimens illustrated in Plate V were grown by Mr. C. P. Close, College Park, Prince Georges County, Md., in 1912.

¹ Letter from Mr. W. F. Allen, June, 1912.

ORMOND PERSIMMON.

SYNONYMS: *Bostrom*, *Vining's Winter*, *Ormond Winter*.

[PLATE VI.]

EARLY HISTORY.

The Ormond persimmon belongs to the oriental species *Diospyros kaki*. Its early history is somewhat uncertain. The original tree was apparently sent from Washington, D. C., supposedly by the Department of Agriculture, to the Rev. E. Y. Pinkerton, at Ormond, Fla. There is a difference of opinion, or recollection, at the present time with reference to when this occurred. Mr. J. A. Bostrom¹ places it about the year 1870, but Mr. James P. Vining,² who has known the variety for many years, has assumed a date several years later than this, his conclusion being based on the time of certain property transfers which occurred in the late eighties. But there appears to be a unity of statement regarding the general facts of the case.

The tree was planted by Mr. Bostrom for Mr. Pinkerton, and, as recalled by the former, it was about the size of a lead pencil and apparently a seedling, as it bore no signs of having been budded or grafted. At the time the tree came into Mr. Bostrom's hands there was a side branch which had developed from a point near the crown. When it was planted this branch was cut off and grafted by Mr. Bostrom into a wild persimmon tree on his own place.

On account of the enforced absence of Mr. Pinkerton the tree received but little care and soon died. However, Mr. Bostrom's graft grew, and within a year or two it began to fruit. The tree which developed from this graft is still in the possession of its original owner and is in a thrifty condition.

According to Mr. Vining, the fruit at first was not recognized as of any special value, but later, because of its long-keeping characteristics, it attracted attention.

This variety has been propagated locally to a limited extent for some years. It is known to some about Ormond as the "Bostrom" persimmon. In 1909 it was offered to the trade by Griffing Brothers Co., of Jacksonville, Fla., and catalogued under the name "Vining's Winter," but at the request of Mr. Vining it was listed the following year as "Ormond Winter." Under the code of nomenclature of the American Pomological Society this name is reduced to Ormond.

¹ Letter from Mr. Bostrom, January, 1913.

² Letter from Mr. Vining, June, 1911.

DESCRIPTION.

Form oblong; size small to medium in comparison with many of the more widely known Japanese varieties; cavity even with surface, somewhat corrugated and furrowed; calyx large, lobes strongly reflexed; apex a raised point with four indistinct furrows radiating from it; surface smooth; color yellowish red; dots minute, scattering; skin thin, rather tender; bloom whitish; flesh of very deep orange color with reddish tinge toward center; texture meaty, tender, only moderately juicy, with rather numerous small fibers extending nearly entire length; seeds long and rather large, number variable, first fruits to ripen usually containing one or more, later fruits mostly seedless or at most containing only undeveloped rudimentary seeds; flavor sweet, fairly rich, losing all astringency when soft; quality good to very good. The first fruits to ripen, which are usually imperfect, reach maturity in November and December; the bulk of the crop, however, retains its firmness, and at Ormond it is usually gathered about the last week in December in order to avoid the effects of the relatively low temperatures that are likely to occur after that time. The foliage usually drops considerably before the fruit is picked. While a temperature of 25° F. is said to have no very appreciable effect on the fruit, if subjected to one below 25° F. it causes the fruits to soften, and fermentation soon follows.¹

After the fruit is picked, if it is held in a cool place it matures gradually, some of the specimens retaining their firmness until February and March, or even later in some instances.

The tree makes a vigorous, upright growth and bears abundantly and regularly. The foliage usually drops in early December in the latitude of Ormond, and where the fruit is allowed to remain on the trees, as is commonly done, till the end of that month or early January, the heavily loaded branches produce a striking effect.

The late season and long-keeping qualities of this fruit, together with its heavy and regular bearing proclivities and its pleasing dessert quality, make it a variety among the Japanese persimmons having quite unusual characteristics. It should be widely tested, but on account of its lateness in maturing it may be expected to succeed best in the more southern Japanese persimmon districts.

The specimens illustrated in Plate VI were received from Mr. James P. Vining, Ormond, Volusia County, Fla., in 1911.

¹ Letter from Mr. Vining, December, 1911.

POLLOCK AVOCADO.

[PLATE VII.]

EARLY HISTORY.

The Pollock avocado originated on the grounds of Mr. S. H. Pollock, of Miami, Fla., about 1896 or 1897. The seed from which the original tree grew was obtained from a fruit produced on a tree also owned by Mr. Pollock, which it is claimed was brought from Cuba.¹

The present name, given in honor of the originator, was in local use as early as 1901, when budded trees of it under this designation were commercially disseminated by Mr. George B. Cellon, of Miami. The original tree is still in good condition. Fruit was exhibited at the meeting of the American Pomological Society, which was held in Boston, Mass., in September, 1903.²

This variety has been grown to some extent in the work of the Office of Foreign Seed and Plant Introduction of the Bureau of Plant Industry of this department and inventoried as S. P. I. No. 12936.³

DESCRIPTION.

Form pyriform; size very large, sometimes weighing 3 pounds or even more; cavity regular, size and depth medium, slope gradual, furrowed; apex a small point; surface undulating, indented; color greenish with yellow marblings and indistinct purplish stripes; dots numerous, brown, indented; flesh yellow with purplish veins, buttery, tender; seed obconic, medium in size in comparison with fruit, nearly filling cavity; flavor mild, very pleasant; quality very good; season August and September, sometimes extending into October in southern Florida.

The tree makes only a moderate growth and produces a fair number of very large fruits. Though much less important commercially than the Trapp avocado,⁴ which in this respect leads all other sorts grown in Florida, it is perhaps surpassed only by that variety in the esteem in which it is held, its large size and high dessert quality being its chief distinguishing characteristics.

The specimen illustrated in Plate VII was grown at the Subtropical Plant Introduction Garden of the Bureau of Plant Industry, Miami, Dade County, Fla., in 1912.

¹ Letter from Mr. Edward Simmonds, Subtropical Plant Introduction Garden, Miami, Fla., December, 1912.

² Letter from Prof. P. H. Rolfs, November, 1912.

³ Bureau of Plant Industry, Bulletin 97 (Inventory No. 11), p. 119.

⁴ For description and illustration, see Yearbook, U. S. Dept. of Agriculture, for 1905, p. 508.

PECANS. -

[PLATE VIII.]

Until quite recent years planters of pecan trees have been greatly handicapped in the selection of varieties because of the limited number of choice sorts which have shown special adaptability to particular localities. In comparison with most other fruits the number of varieties available in the form of budded or grafted trees has been very small, and of most varieties but a small stock was carried by the nurseries. Planters frequently have been satisfied with pecan trees merely because they were "grafted" or "budded," without regard to the variety or its adaptability to local conditions, and not infrequently the varieties have been of a "selected list" made up by unscrupulous tree sellers. Up to the present time from 100 to 150 varieties have been propagated, but of these many have already been abandoned and others are of too recent introduction to have demonstrated their value.

At present there are about 50 sorts of sufficient merit to make it possible to select varieties reasonably certain to succeed in almost any pecan-growing locality. The introduction of new varieties is no longer necessary or advisable unless they possess very evident superiority in productiveness, size, disease resistance, cracking quality, dessert quality, or other important characteristics, or proved adaptability to special conditions. Additional varieties of medium value only burden the lists and cause confusion. With the exception of the Havens, the varieties here described and illustrated are of special interest because of their having originated in sections to which the adaptability of few named sorts has yet been demonstrated.

BURKETT PECAN.¹SYNONYM: *Labadie*.

The original tree of the Burkett pecan was first discovered by Mr. J. H. Burkett, of Clyde, Tex. It was a wild tree then standing in a crowded location near the banks of Battle Creek, 3 miles east of Putnam, Callahan County, Tex., on a farm owned at that time by Mr. Y. A. Orr. After observing this tree for three seasons Mr. Burkett became so favorably impressed with its bearing habit and the evident merits of the nut that on July 4, 1903, he inserted two buds from it in a pecan sprout grown from a stump cut two years before, which stood in the open some 300 yards from the parent tree and on land then owned by him. This budded tree made a rapid growth, and in 1904 it matured two nuts. From that year the annual crops

¹ The descriptions of pecan varieties which follow have been furnished by Mr. C. A. Reed, scientific assistant, Bureau of Plant Industry.

increased in size until 1910, when it yielded 10 pounds. The following year the crop fell to 6 pounds. In 1912 it again bore well, although trespassers gathered practically the entire crop, and the exact yield is therefore not known. The parent tree passed out of control of Mr. Burkett and was killed by being cut to the ground in the spring of 1912.

In an address on "New varieties of pecans," given by Mr. M. Falkner, of Waco, Tex., at a meeting of the Texas State Horticultural Society in July, 1911, this variety, on the basis of information received from different sources, was unwittingly reported under the names "Burkett" and "Labadie," the latter having been applied in honor of Mr. Victor H. Labadie, of Dallas, Tex., who had become interested in it. This address was subsequently published as a part of the report of that society.¹ This unintentional duplication soon became apparent and "Burkett" was recognized as the correct name of the variety by Reed in 1912.²

DESCRIPTION.

Size large, averaging from 50 to 55 nuts per pound; form roundish oblong, distinctly shouldered at apical end; base flattened; apex short; color light gray brown, with numerous black specks over entire surface and dark splashes near apex; shell moderately thin, though soft and breaking readily; partitions somewhat thick, corky; cracking quality good; kernel symmetrical, roundish oblong, broadly grooved, surface smooth; texture moderately firm; flavor sweet; quality very rich, oily. The nuts are uniform in size and the kernels plump, although not to such a degree as to interfere with the cracking quality.

The budded tree was described to Mr. Falkner in 1911 as then being "about 12 feet high, with a 6-inch diameter 3 feet above ground, and of symmetrical form." Mr. Burkett reports that the foliage of this tree is dense, coarse, and of a rich green color. He states that the variety is easy to propagate. The nuts¹ are said to form in large clusters.

Because of its good quality, ease of cracking, large size, and place of origin, this variety should be especially valuable for planting in northern and central Texas and places of similar climatic and soil conditions.

The specimens illustrated in Plate VIII were of the crop of 1911 from the budded tree and were supplied by Mr. Burkett.

¹ Proceedings of the Fourteenth Texas Farmers' Congress. Texas Department of Agriculture, Bulletin 22, 1911, p. 122.

² The Pecan. Bureau of Plant Industry, Bulletin 251, p. 47.

MAJOR PECAN.

The parent tree of the Major pecan is located in a native pecan forest near the mouth of Green River, Henderson County, Ky. It is owned by Mrs. Laurie M. B. Major, of Henderson, in honor of whose late husband it was named. It appears to have attracted considerable local attention previous to 1907, when Mr. C. G. Taylor, of Princeton, Ind., sent specimens of the nuts to Mr. W. N. Roper, of Petersburg, Va. The evident merits of the nuts and the account of the tree so favorably impressed Mr. Roper and his partner, Mr. E. Gill Hinton, that the latter went to the original tree during the summer of 1908 for the purpose of obtaining scions, and from the scions then obtained the first nursery-grown trees of the variety were propagated. The variety was first described in the second edition of "The Pecan and Its Culture," by H. H. Hume, in 1910.

The actual bearing record of this tree has not been kept, but it is stated by persons in the locality of its origin that during recent years it has borne regularly and that frequently the crops have been approximately 100 pounds. It is a healthy tree 2½ feet in diameter at breast height and 59 feet to the first branch.

DESCRIPTION.

Size somewhat below medium, averaging from 85 to 90 nuts per pound; form roundish oblong to oblong conic, tapering slightly at base; apex short, rather plainly grooved; color light brown with sparse markings toward apex; shell smooth, moderately thick, brittle, cracking readily; kernel roundish, oblong, plump, bright colored, and sufficiently broad grooved to release kernel readily; texture firm, crisp; flavor sweet, pleasant; quality excellent. In cracking quality and richness of kernel this nut compares favorably with any of the known sorts. These points, together with its reported productiveness and the latitude in which it originated, should commend it strongly for trial planting in the northern portions of the pecan area.

The specimens illustrated in Plate VIII were of the crop of 1911 and were obtained from the original tree by Mr. T. P. Littlepage, of Boonville, Ind.

OWENS PECAN.

The original tree of the Owens pecan was grown from a nut purchased and planted in the spring of 1900 by Mr. F. M. Owens, upon whose plantation it now stands, near Gerald, Coahoma County, Miss. Mr. Owens purchased nuts for planting from the J. Steckler Seed Co., of New Orleans, and from Mr. S. H. James, of Mound, La.

Having made no attempt to keep the seedling trees from the two sources apart, he is now unable to determine from which source the seed came. The nut characters and the habit of the tree so much resemble the Frotscher, one of the varieties then being sold by the J. Steckler Seed Co., that it seems fair to assume that the Owens is a seedling of that variety.

The original tree was grown in a nursery row and subsequently removed to its present location. In 1907 it bore one nut. In 1908 the crop was an entire failure, but in 1909 it matured about 100 nuts, and in 1910 it had approximately 300 nuts. In 1911 it bore about 37 pounds, but in 1912 the crop was again very light. The nuts usually mature about September 20. This variety was first propagated in the spring of 1911, when Mr. Owens sent scions to two nurserymen in Louisiana for use in top working. Its name was suggested in March, 1911, by Mr. James, in honor of Mr. Owens.

DESCRIPTION.

Size large, varying from 55 to 80 nuts per pound, averaging from 60 to 65; form oblong, oval, slightly compressed, with tapering base and apex, often one sided; sutures quite distinct, somewhat ridged; color reddish gray-brown with broad reddish-black to black markings, mainly at apical end; shell thin; partitions fragile; cracking quality excellent; kernel somewhat shriveled, often lacking in plumpness; surface not always smooth; texture rather dry; flavor fairly good; quality good.

The parent tree is described by Mr. Owens as being about 40 feet tall, having a spread of 40 feet 4 inches, and as measuring 33 inches around the trunk at breast height. The foliage is dense, leaflets large, rather coarse, and of a dark-green color. The old wood is of a slaty-gray color and the new growth an olive green. On the new wood the dots are narrow, long, and quite numerous.

The fact that the place of origin of this variety is near the northern limit of the region known to be adapted to the southern varieties combines with the good size, ease of cracking, and earliness of maturing of the nuts to make this variety well worthy of trial in northern Mississippi, southern Arkansas, southern Oklahoma, and sections of similar soil and climatic conditions.

The specimens illustrated in Plate VIII are from the original tree, crop of 1911, and were supplied by Mr. Owens.

WARRICK PECAN.

The original tree of the Warrick pecan stands in a native forest in Warrick County, Ind. It is located on property near Pigeon Creek, and is now owned by Mr. C. F. Brown, of Rockport, Ind.

It was first called to public attention at Mount Vernon, Ind., when, in December, 1909, it was awarded the first premium for seedling pecans by the Southern Indiana Pecan Association. It was named by Mr. T. P. Littlepage, of Boonville, Ind., in the fall of 1910, when he visited the tree for the purpose of obtaining nut specimens and the bearing record of the tree. Its propagation was begun by Mr. Littlepage in the spring of 1911.

Little is known of the exact bearing record of this tree, as until recent years the nuts have been harvested annually by nut gatherers who made no attempt to keep separate the nuts from individual trees, but it is locally reported to have been a heavy and regular bearer.

DESCRIPTION.

Size rather below medium, averaging from 75 to 80 nuts per pound; form oblong, with rather short apex but longer base; color yellowish brown, bright, with irregular dark splashes; shell rather hard, moderately thin, brittle; cracking quality good; kernel rather dark straw color, usually plump, though occasionally somewhat defective; flavor pleasant; quality good.

The reported heavy-bearing habits, the attractive appearance of the nuts, the good quality of its kernels, and its place of origin make this variety of distinct promise to pecan planters in the more northern districts suited to the species.

The specimens illustrated in Plate VIII were obtained from the original tree in 1911 by Mr. J. Ford Wilkinson, of Rockport, Ind.

HAVENS PECAN.

The original tree of the Havens pecan stands on the residence grounds of Mrs. Kate V. Havens, widow of the late Walter Havens, of West Pascagoula, Miss. It was grown from a nut of the Russell variety, secured and planted in the spot where the tree now stands by Mr. Havens about 1894. It began bearing when 5 years of age; and while no exact record of its annual crops has been kept, it is said¹ to be much like the parent variety in its bearing habit.

The apparent merits of this nut were such that it was named in honor of the originator in 1902, and in 1903 or 1904 its propagation was begun by Mr. Theodore Bechtel, of Ocean Springs, Miss. It has since been quite widely disseminated.

DESCRIPTION.

Size medium to large, averaging from about 65 to 70 nuts per pound; form oblong, somewhat ovate, compressed, with sharp base

¹ Letter from Mrs. Havens, July, 1912.

and blunt apex; color dark brown splashed toward apex and dotted on flattened sides with purplish black markings; shell very thin, brittle; partitions thin and fragile; cracking quality excellent; kernel bright brown, smooth, usually plump, narrowly grooved; texture firm, fine grained; flavor pleasant; quality good.

In form and habit of growth the Havens tree resembles its parent, although it is rather more symmetrical than that variety. Its bearing habits are also very much the same. Mrs. Havens reports that this variety is a vigorous grower and a heavy annual bearer, but says that the nuts from the parent tree are rather inclined to be defective in plumpness. Mr. F. H. Lewis, of Pascagoula, Miss., who has had trees in bearing for some years, reports little trouble in that respect. In his opinion its productiveness, thinness of shell, and excellent cracking qualities make it one of the most promising varieties for planting in the Gulf coast region at the present time. The specimens examined at the Department of Agriculture during the past several years have not shown an objectionable number of defective kernels. Its known habits of bearing, together with its resistance thus far to fungous diseases and its excellent cracking qualities, should commend it to planters in sections to which the Russell variety is adapted.

The specimens illustrated in Plate VIII were of the crop of 1911 and were grown by Mr. F. H. Lewis, of Pascagoula, Miss.

M. C. Kuhnau

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PROMISING NEW FRUITS.

BY

WILLIAM A. TAYLOR,

Chief of Bureau,

AND

H. P. GOULD,

*Pomologist in Charge of Fruit-Production Investigations,
Bureau of Plant Industry.*

[FROM YEARBOOK OF DEPARTMENT OF AGRICULTURE FOR 1913.]

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PROMISING NEW FRUITS.

By WILLIAM A. TAYLOR, *Chief of Bureau*, and H. P. GOULD, *Pomologist in Charge of Fruit-Production Investigations, Bureau of Plant Industry*.

INTRODUCTION.

THE conditions under which fruit is grown and marketed are slowly though constantly changing. Standards of excellence in different particulars are being raised. Consumers are gradually acquiring a better knowledge of what constitutes good fruit. Too many varieties are poor in some particular, though perhaps possessing much merit in all other important respects. Practically no varieties are altogether good.

A variety may be productive, an excellent shipping fruit, and attractive in appearance, but poor in flavor; another may have every desirable quality except productiveness; or a variety well-nigh perfect in other respects is very susceptible to some disease difficult to control. But there is no inherent incompatibility in the various characteristics of fruits to prevent the existence of the ideally perfect variety for a particular purpose—the one without fault for its season of ripening.

Consciously or otherwise, the search for the ideal in fruit varieties goes on. Each year sees new varieties brought to light and introduced to the trade. A few of these persist and in time become important in the fruit industry, but the great majority are never widely known, because in reality they do not meet any special need. A new variety in order to attain enduring importance in the fruit industry must represent a high standard of excellence in all particulars, and in at least one particular it must surpass in some region or regions other sorts already in cultivation. And as a rule its merits must even then be persistently and extensively advertised; else its dissemination will be very slow.

It is exceedingly difficult for a new variety, even of the highest merit, to crowd out a mediocre variety that has been extensively planted by many fruit growers. For this reason a variety may be old, as measured by the age of a man, before it becomes generally known. The Stayman Winesap apple, for instance originated nearly half a century ago,

and for many years it has been known in several sections among fruit growers, but it is only during the last 12 or 15 years that its real value has become widely appreciated.

The fruits to which attention is directed in this paper are varieties which, though admittedly falling short of perfection, are believed to possess valuable characteristics which render them worthy of the attention of fruit growers in the districts to which by experience they may be found to be adapted.

It should be stated that the Department of Agriculture has no stock of these varieties for distribution.

BANANA APPLE.

Synonyms: *Flory, Flory Banana, Winter Banana.*

[PLATE VII.]

EARLY HISTORY.

About the year 1873 or 1874 the late David Flory, sr., planted at his homestead, which was located 5 miles east of Logansport and 1 mile south of Adamsboro, Cass County, Ind., 50 apple trees which he had grown from seed for the purpose of having a few stocks on which to graft desirable varieties. The next year, when grafting the trees, he noticed that one of them showed a marked difference from the others in the fine, thrifty growth it had made. Mr. Flory was impressed with its promising appearance and decided to retain it until it should bear fruit.¹ Accordingly the tree was left ungrafted. It came into bearing quite young, producing fruit which was so pleasing to its owner that he named the apple, calling it "Flory Banana."

In 1890 this variety was introduced to the trade by the Greening Nursery Co. under the name "Winter Banana."² This name is reduced to Banana to bring it into harmony with the code of nomenclature of the American Pomological Society. The original tree is still standing and in fair condition; the branches on one side are reported to show some decay as a result of injudicious pruning. It bore a good crop of apples in 1913.¹

DESCRIPTION.

Form roundish to roundish conic, slightly angular, sometimes slightly oblate; size large; cavity regular, rather large, moderately deep, slope gradual, sometimes slightly russeted; stem medium in size and length;

¹ Letter from D. M. Flory, November, 1913.

² Letter from the Greening Nursery Co., November, 1913.

basin regular, medium in size, variable in depth from shallow to deep, depending upon the region where grown, slope gradual, slightly furrowed; calyx segments medium, converging; eye large, open or partially closed; surface smooth with a rather waxy appearance; color greenish yellow with blush of light red, deepening to rose on exposed side, sometimes covering a considerable portion of the surface; dots on surface few, irregular, medium in size, color brownish, but many whitish dots rather large in size showing indistinctly beneath the surface of the skin; skin medium thick, tenacious, bloom very slight, bluish; flesh yellowish; texture medium fine, tender, breaking, moderately juicy; core conical, clasping, large, open; seeds plump, large, brown, numerous; flavor mild subacid, slightly aromatic; quality good to very good; season winter.

The tree grows well in both the nursery and the orchard; comes into bearing quite young; is prolific under reasonably favorable conditions, and hardy—according to the originator enduring winter conditions in 1885 which destroyed most other varieties.¹

Since its introduction this variety has been quite widely disseminated, especially in Ohio, in Indiana, in Michigan, and to a limited extent in Iowa. It has been planted rather extensively in some of the apple districts of the Pacific Northwest. As a commercial variety it appears to be growing in popularity in the northern and northwestern apple districts.

The specimen illustrated in Plate VII was grown in 1913 by Mr. C. H. Whittum, Eaton Rapids, Eaton County, Mich.

MCCROSKEY APPLE.

[PLATE VIII.]

EARLY HISTORY.

The McCroskey apple originated from seed of either a Winesap or a Limbertwig apple which was planted about 25 years ago by the late H. M. McCroskey at his place near Glenloch, about 6 miles east of Sweetwater, Monroe County, Tenn. The exact year is uncertain, but the tree bore its first crop of fruit in 1895.²

The name "McCroskey," in honor of the originator, was suggested early in 1896 by Prof. R. L. Watts, then horticulturist of the Tennessee Agricultural Experiment Station,³ and under that name the variety was described and illustrated

¹ Letter from the Greening Nursery Co., November, 1913.

² Letter from H. M. McCroskey, July, 1898.

³ Letter from Prof. Watts, February, 1896.

by him.¹ From the resemblance of the fruit to the Winesap apple, it seems probable that it is a seedling of that well-known sort rather than of Limbertwig—a possibility suggested by Mr. McCroskey, as above stated. Prof. Watts regarded it as the most valuable new seedling winter apple of Tennessee origin that had been brought to his attention, its main points of merit being "productiveness, vigor in growth, symmetry and beauty of fruit, and good quality."²

According to the originator, the fruit of this variety that fell from the tree kept better than Winesap, Ben Davis, or Limbertwig apples that were hand picked.³ Prof. Watts reports the receipt of well-preserved specimens as late as May 1.

DESCRIPTION.

Form conical; size medium; cavity regular, medium in size and depth, slope abrupt, with small russeted area about stem; stem about one-half inch in length, slender; basin regular, medium in size and depth, slope rather abrupt, slightly furrowed in some specimens, with slight leather cracking about apex; calyx lobes medium in size, reflexed; eye closed or slightly open; surface smooth; color greenish yellow, entirely overspread in well-colored specimens with rather dark red and indistinctly marked with darker stripes; dots small, rather numerous, not conspicuous, yellowish white in color; skin moderately tough and tenacious; flesh yellowish; texture moderately fine grained, fairly juicy; core conic, clasping, small to medium in size, open; calyx tube small, funnel form, open nearly to core; seeds medium size, plump, reddish brown, 6 to 8 in number, rarely more; flavor subacid, rather rich, pleasant, very good; season winter.

This apple has not been widely disseminated, but to the extent to which it has been grown in Tennessee it appears to be a very promising sort.

It is interesting to note in the present connection that there are a number of seedlings of the Winesap apple which have assumed considerable commercial importance. The most prominent one which is an authentic seedling of this variety is Stayman Winesap.⁴ Magnate⁵ is valuable in some sections. Arkansas, Paragon, Arkansas Black, and Kinnard are other varieties disclosing evidence of Winesap parentage

¹ Apples of Tennessee Origin, Tennessee Agricultural Experiment Station Bulletin, vol. 9, No. 1 (May, 1896), p. 18.

² Tennessee Experiment Station Bulletin, vol. 9, No. 1, p. 19.

³ Letter from Mr. McCroskey, July, 1898.

⁴ For illustration and description, see Yearbook U. S. Department of Agriculture for 1902, p. 470.

⁵ For illustration and description, see Yearbook U. S. Department of Agriculture for 1906, p. 355.

each of which has gained considerable prominence in some districts. Moreover, several unnamed apples of evident value reported to be seedlings of the Winesap and which resemble it in many respects have been called to the attention of this department. It therefore seems probable that a rather high percentage of Winesap seedlings possess more than the ordinary merit. The usefulness of that variety for breeding purposes is thus indicated.

The specimen of McCroskey apple illustrated in Plate VIII was grown in 1912 by Mr. L. C. H. Ayres, of Midway, Green County, Tenn.

OPALESCENT APPLE.

Synonyms: *Hudson's Pride of Michigan, Hastings.*

[PLATE IX.]

EARLY HISTORY.

The Opalescent apple originated with Mr. George M. Hudson, Shultz, Barry County, Mich. The circumstances of its origin as given by him are as follows:¹

A number of years ago I was digging out the oak stumps in my orchard and found a thick cluster of sprouts by the side of one. I picked out the best sprout and set it out, intending to top-graft it, but you will see the result.

At the same time, specimens of the fruit were submitted to the department by the originator under the name "Hudson's Pride of Michigan," with the request that a suitable name be given to the variety. Accordingly "Hastings," the township in which the variety originated, was suggested as an appropriate name. In due course this was approved by Mr. Hudson, and the name was published by the American Pomological Society.² But prior to such publication, this variety had been disseminated by the Dayton Star Nurseries,³ of Dayton, Ohio, under the name "Opalescent."⁴ The original tree was still standing and in fairly good condition in 1912.⁵

¹ Letter from Mr. Hudson, December, 1896.

² Proceedings, 25th session, American Pomological Society, 1897, p. 38, 1898.

³ Letter from J. W. McNary, receiver, Dayton Star Nurseries, February, 1899.

⁴ Historical and descriptive notes concerning this variety have been published comparatively recently as follows: Varieties of fruit originated in Michigan, Michigan Agricultural Experiment Station, Special Bulletin 44, p. 18; New or noteworthy fruits, New York Agricultural Experiment Station, Bulletin 364, p. 181.

⁵ Letter from George W. Thomas, December, 1913.

DESCRIPTION.

Form roundish; size large; cavity regular, large, deep, slope gradual with russet markings; stem moderately long, slender; basin regular, size and depth medium, slope abrupt, slightly furrowed in some specimens, sometimes slightly russetted and leather cracked; calyx segments small to medium, converging; eye medium, open or partially open; surface smooth; color yellow, washed over nearly entire surface with mixed red and indistinct stripes and splashes of dark crimson, sometimes an overspread of gray; dots rather conspicuous, yellowish, many indented; skin medium thick, tenacious, light bluish bloom; flesh yellowish, sometimes slightly tinged with red near the skin; texture medium coarse, tender, moderately juicy; core roundish or roundish conic, clasping, size medium, open; seeds plump, medium in size, brown, numerous; flavor mild subacid; quality good to very good; season late fall and early winter.

The tree has been reported to be somewhat subject to blight, but otherwise to be healthy and vigorous.

The Opalescent apple is not extensively grown at the present time, but it has been quite widely disseminated in the northern apple districts since it was introduced 12 or 13 years ago. Because of its attractive appearance and fairly good quality, together with other desirable characteristics, it is worthy of being thoroughly tested for a late fall and early winter apple generally in the northern apple regions.

The specimen illustrated in Plate IX was grown in 1913 by the New York Experiment Station, Geneva, Ontario County, N. Y.

LIZZIE PEACH.

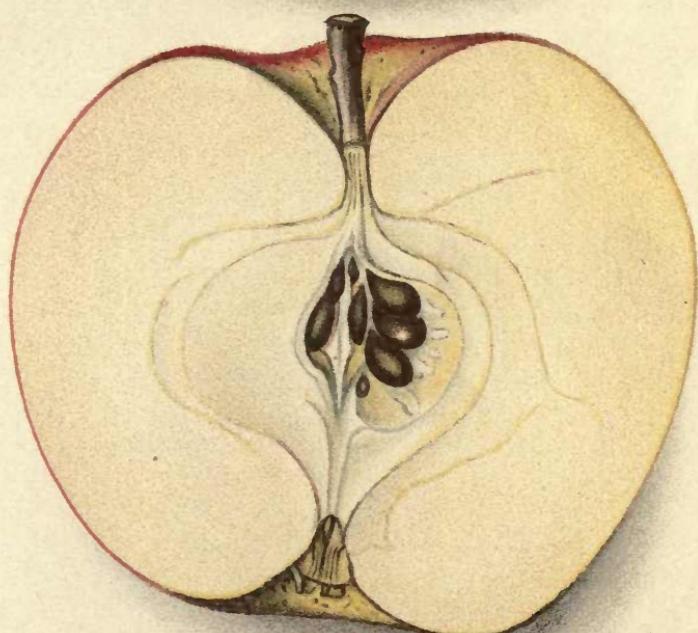
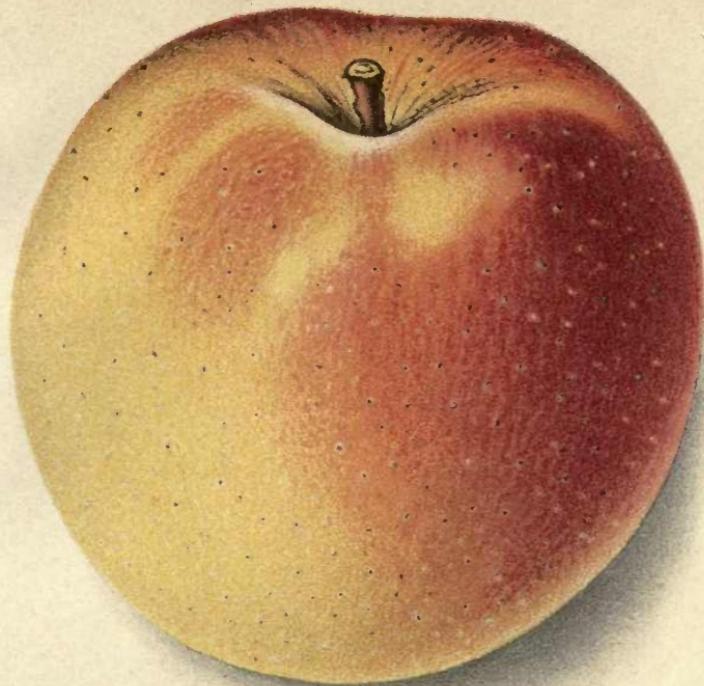
[PLATE X.]

EARLY HISTORY.

The history of the Lizzie peach is identical with that of several promising varieties that have been developed in recent years with a view to meeting a distinct need and as the result of a well-directed personal effort toward a particular end.

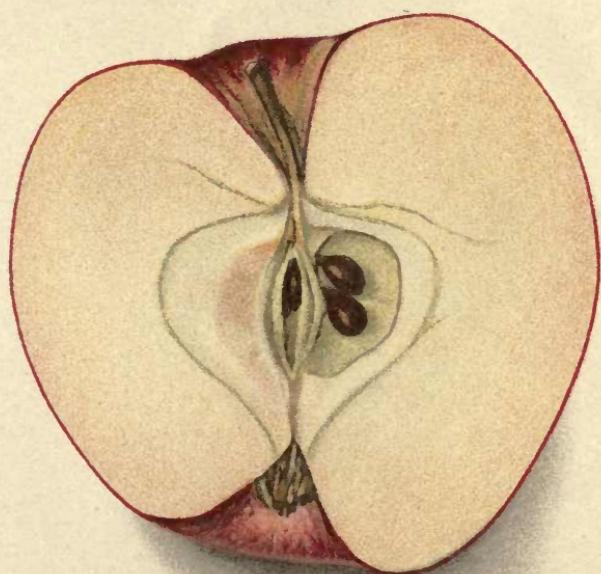
The Carman¹ peach, probably a chance cross of the Elberta and Family Favorite, originated from a seed of the former variety that was planted in 1889 by Mr. J. W. Stubenrauch of Mexia, Limestone County, Tex. The Carman was the forerunner of a considerable number of varieties that Mr. Stubenrauch has originated since that variety appeared. From the first fruiting of the Carman in 1892, it gave promise of unusual value. This early promise has

¹ For illustration and description, see Yearbook U. S. Department of Agriculture for 1901, p. 385.



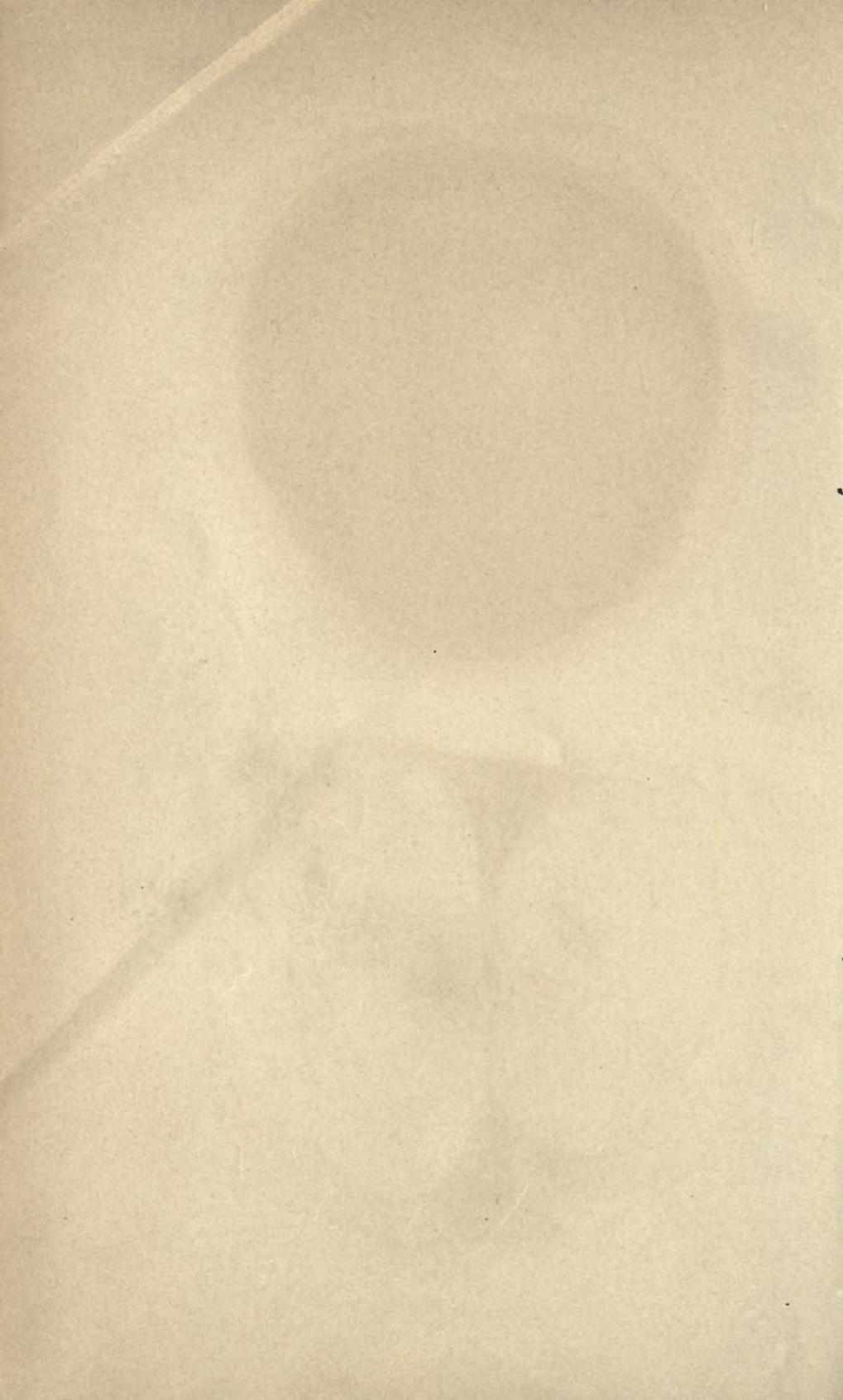
E. J. Schutt.

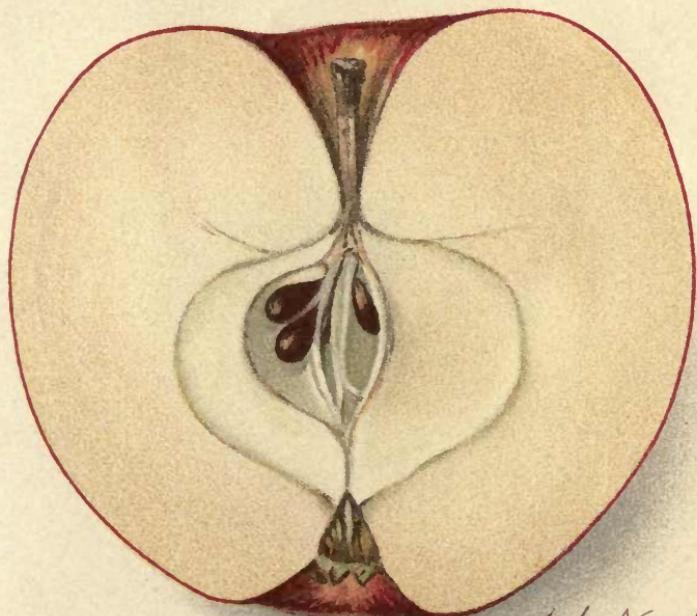
BANANA APPLE



F. A. Newton

Mc CROSKEY APPLE





f.f. Newton

OPALESCENT APPLE

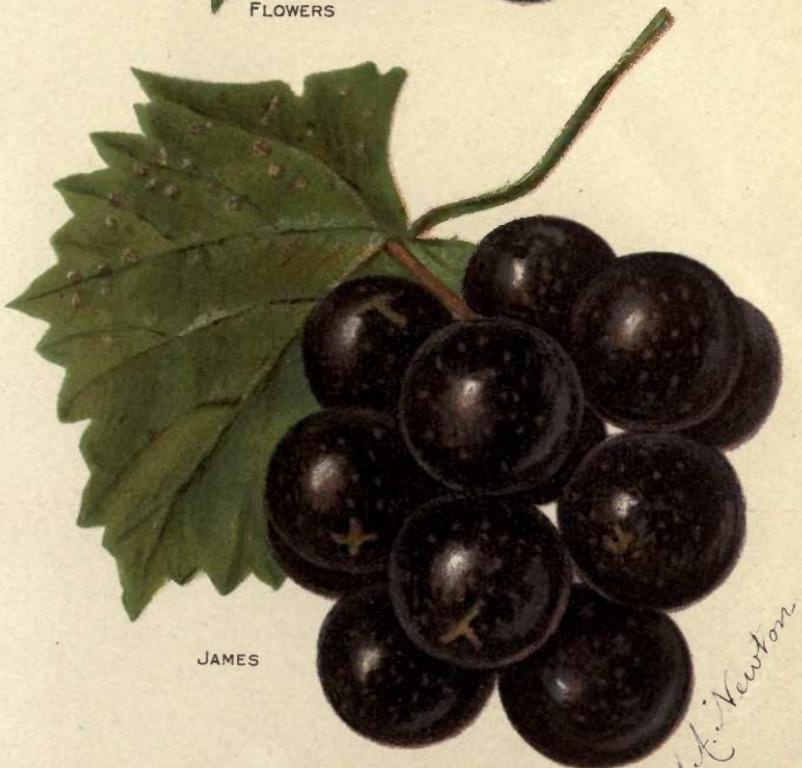


E. I. Schutt.

LIZZIE PEACH



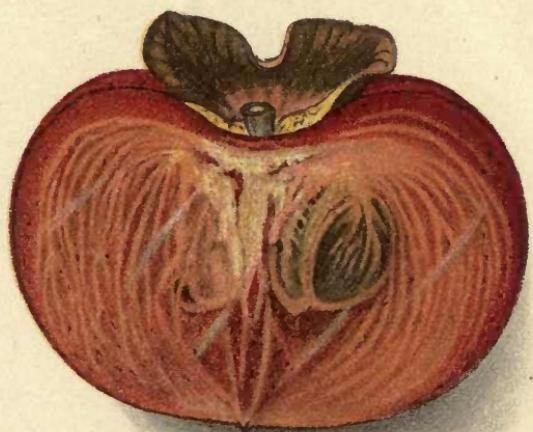
FLOWERS



JAMES

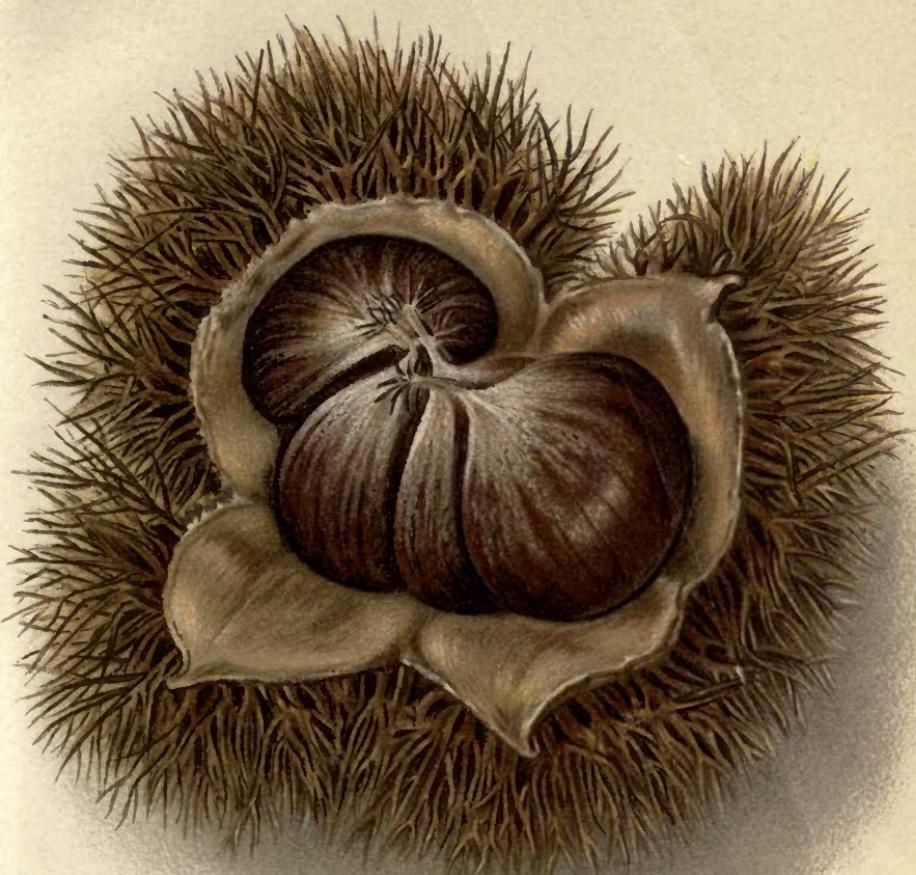
FLOWERS AND JAMES GRAPES

Zelikenton



E. J. Schutt.

TRIUMPH PERSIMMON



E. J. Schutt.

BOONE CHESTNUT

been fulfilled in a marked degree as the years since its introduction have passed.

As Mr. Stubenrauch observed the behavior of the Carmen, he began to consider means whereby nature could be assisted in producing other varieties that would be better for his region. He had previously planted quite heavily of the Elberta peach. Among the trees of this variety he had observed that a particular one was remarkable in comparison with the others because of its more thrifty growth, its greater productiveness, and the superior quality of the fruit. Having a block of the Mamie Ross peach which was isolated from other varieties, some of the best trees of it were partially "budded over" with buds taken from the Elberta tree just referred to. In the same manner, selected trees of the Bell October peach—a fine, late, yellow free-stone variety of high quality, ripening with the Salway—were top-worked with buds of the same Elberta tree that was used in budding the Mamie Ross trees.

As the Elberta buds top-worked into the Mamie Ross and Bell October trees grew and came into fruiting, the plan followed was to select the best specimens of fruit on the Elberta limbs as they ripened and to save the seeds from them, care being taken to keep those from the Mamie Ross trees separate from those borne on the Bell October trees. These were planted the following winter, which was that of 1901-2. The trees which came from these seeds made an excellent growth the next season and were transplanted from the nursery into orchard rows.

All of these trees which did not begin bearing earlier came into fruiting the third and fourth years from the planting of the seeds. They were systematically studied by Mr. Stubenrauch, and at the end of the fifth season a considerable number were discarded and dug up, as they gave no promise of value. Selections continued to be made for several years, or until it became possible to choose from the collection a series of varieties of merit that produce fruit continually in the region of their origin from about July 15 to October 1, or a period of approximately two and one-half months.

The varieties which constitute this series have a firm flesh and stand shipping remarkably well. One of the aims of the originator has been to secure varieties that could be shipped successfully for a distance of 150 to 200 miles by fast

freight or express without the use of ice, thus making it possible readily to supply the smaller markets located comparatively near points of production, which are frequently without peaches, while the larger and more central markets are often glutted. Moreover, the most of these varieties appear to be especially hardy while in blossom. They are reported to have borne a good crop of fruit in a number of seasons when several degrees of frost occurred during the blossoming period and completely destroyed the blossoms of most of the standard sorts. In general, the trees are thrifty. The fruit is as large as or larger than the Elberta when grown under the same conditions and of good dessert quality in favorable seasons. Names have been given during the last two or three years to the more important selections made by Mr. Stubenrauch. These include the Lizzie, which has been chosen from among this collection of varieties for illustration and description in the present connection. It originated from one of the seeds selected from an Elberta limb on a Bell October tree, and accordingly it may be a natural cross between these varieties. Its characteristics give considerable weight to this supposition.¹

DESCRIPTION.

Form globular to obovate, sides sometimes unequal; size medium to large; cavity regular, medium, rather deep, slope abrupt; suture shallow except at cavity, extending beyond the apex; apex a small tip; surface slightly irregular; color rich yellow with light reddish blush tending to stripe on exposed side; down very short and sparse; skin moderately thick and tough; flesh rich yellow, red at pit; texture firm, meaty, moderately juicy; stone broad, obovate, pointed at tip, free, large; flavor rich, vinous, nearly sweet; quality good to very good; season latter part of August or about two weeks after Elberta at place of origin.

The tree makes a good, thrifty growth and is reported to be intermediate in habit between the Elberta and the Bell October. It is productive, usually requiring heavy thinning in favorable seasons. The leaf glands are slightly reniform, many nearly globose. The fruit is reported to be quite highly resistant to brown-rot. The variety is considered worthy of being extensively tested, especially in the peach-growing districts of the Southern and Southwestern States.

The specimen shown in Plate X was grown in 1913 by Mr. J. W. Stubenrauch, of Mexia, Limestone County, Tex.

¹ Information supplied by Mr. Stubenrauch in various communications to this department.

FLOWERS GRAPE.

[PLATE XI.]

That the fruit industry of the United States has been built up largely with fruits which represent introduced species is a fact which presents itself at times with almost startling force and significance. This, however, is less true of grapes than of the other important fruits.

While the Vinifera grape industry represents an investment of many millions of dollars, the cultivation of this class of grapes is largely restricted to the territory west of the Rocky Mountains, including California. The grapes which are extensively grown elsewhere throughout the country, with few exceptions, belong to native species of *Vitis*. The Muscadine grapes, which include the native species *Vitis rotundifolia* and *Vitis munsoniana*, are becoming increasingly important in the South Atlantic and Gulf Coast States.

In view of the present interest in the culture of these grapes in many parts of the region to which they are adapted, and the systematic attention that is now being given to the investigation of them and the breeding of more desirable varieties, it may be expected that the culture of these grapes will eventually contribute very materially to the horticultural development of the South.

Unlike most other fruits, the Muscadine grape has thus far developed but few important varieties; in fact, a single variety, the Scuppernong, is of such great importance in comparison with the others that it might almost be referred to as constituting the commercial Muscadine industry. There are, however, at least six varieties of considerable importance, with a still larger number that have been named and more or less disseminated, but which thus far are chiefly of local value.

The two varieties shown in Plate XI are among the six most important sorts.

EARLY HISTORY.¹

The original vine of the Flowers grape was discovered in 1819 by "Popping Billy" Flowers, growing in a swamp 15 miles south of Lumberton, Robeson County, N. C., and was

¹ History and description condensed from notes published by George C. Husmann and Charles Dearing, The Muscadine Grapes, Bureau of Plant Industry, Bulletin No. 273.

transplanted by him to a location a few hundred yards distant. It has since been grown quite extensively for home use in the region of its origin. It is the oldest named black variety of *Vitis rotundifolia* in cultivation.

DESCRIPTION.

Cluster nearly round, fairly compact; large for the species, composed generally of 6 to 10 berries; berries slightly oval, medium size, purplish black; dots only faintly visible; skin very thick and tough; flesh whitish, meaty, tough, not very juicy; seeds usually 3 to 4, more angular than other varieties and adhering tenaciously to the pulp; flavor sweetish, lacking in sprightliness; quality medium; season late, from about October 15 until destroyed by frost.

The vine has an upright, slender growth and is more open and hardly as vigorous as other varieties of the same species. The leaves are thick, rather dark green in color, leathery, cordate, with sharp-pointed tip and sharply serrated margin.

The distinguishing characteristics of the Flowers are its tendency to bunch, coarseness and meatiness of flesh, thickness of skin, late season of ripening, good shipping qualities due to strong adherence of berries to peduncles, and productiveness. In these respects this variety is well distinguished from other sorts. It is used mostly for making wine, though the product is not considered as good as that from the other important Muscadine varieties.

It appears to be especially well adapted to sandy-loam soils having a relatively high elevation, and it is reported to do well in such locations from North Carolina southward as far as the Florida Keys.

The cluster illustrated in Plate XI was grown in 1910 at the Pender Test Farm of the North Carolina Department of Agriculture, Willard, Pender County, N. C.

JAMES GRAPE.¹

[PLATE XI.]

EARLY HISTORY.

The first vine of the James variety was found growing, about 1866 or 1867, by Mr. B. M. W. James, near Grindool Creek, a short distance from the post office then known as Grindool, Pitt County, N. C., but now called Whitehurst, about 3 miles south of Parmele.

¹ History and description condensed from notes published by George C. Husmann and Charles Dearing, *The Muscadine Grapes, Bureau of Plant Industry, Bulletin No. 273.*

Promising New Fruits.

When discovered, the vine was only a few inches long, but it bore a cluster of grapes composed of 9 or 10 berries which were unusually large and which remained on the vine in good condition for a long time. These characteristics attracted Mr. James's attention, and he transplanted it to his home grounds, a short distance away. This vine is still growing and covers an arbor about 20 feet in diameter.

DESCRIPTION.

Cluster nearly round, fairly compact; large for the species, but because of the size of the berries rather than their number; berries usually 4 to 6 to the cluster, but ranging from 2 to 12 or even more, round, large, rather glossy, bluish or deep purplish black when fully ripe, with few but conspicuous "guinea-egg" specks. Before reaching full maturity there is a characteristic reddish coloring about the peduncle; flesh firm, meaty, juicy; skin thick, rather tough; seeds typical of the species, but larger than those of other leading varieties, adhering rather strongly to pulp; flavor sweetish but rather flat, berries ripening in the shade being much better than those which ripen in the sun; quality medium; season about October 1.

The vine is vigorous and productive, and it readily adapts itself to systematic training on upright forms of trellises. The leaf is cordate in form with serrate margin. In late summer a portion of the space between the prominent veins turns yellow some time before the portions immediately bordering them lose their green color, thus producing an effect which is quite characteristic of the variety.

The James is not much grown outside of North Carolina, though it appears to do well as far south as Florida.

The attractive appearance of the fruit, its juiciness, fair quality, and good adherence to the peduncle combine to make the James one of the best *Rotundifolia* varieties for general purposes in the regions to which it is adapted.

The cluster illustrated in Plate XI was grown in 1910 at the Pender Test Farm, Willard, Pender County, N. C.

TRIUMPH PERSIMMON.

[PLATE XII.]

EARLY HISTORY.

In the late seventies or early eighties the late Gen. H. S. Sanford procured some imported Japanese persimmon trees for planting at his place near Sanford, Fla. The budded or grafted top of one of these trees proved to be dead, but the stock below the point of union was alive. It was rejected

by the owner, but carried home and planted by one of his employees, a Mr. Ludbury. In due course a sprout grew from the roots, and from it a tree was budded for Mr. H. L. DeForest. The original tree died shortly after this, but apparently the one propagated for Mr. DeForest lived and became the source from which the variety, now much grown in some parts of Florida, was propagated.

Very early in the history of the variety, following the successful growing of the tree on Mr. DeForest's place, about 15 wilding trees, which came up in the orange grove on the homestead of Mrs. O. Kennedy, were budded to this variety. This place was located a short distance north of Sorrento and about 11 miles east of Eustis, Fla.

This variety was first commercially propagated some time prior to 1887 by the late G. H. Norton, then the proprietor of a nursery at Eustis, and by him it was named "Triumph."

It is reported that in 1887 Mr. DeForest shipped 5 boxes of this variety to Boston, where they sold for \$5 per box.¹

DESCRIPTION.

Form distinctly oblate, in cross-section indistinctly quadrangular; size small to medium; cavity regular, large, medium depth, slope very gradual; stem short, about one-half inch, slender; apex a small point set in a very small, shallow basin which is surrounded, in some specimens at least, by an indistinct quadrangular shield of gray; calyx large, 4 lobed, reflexed; surface smooth except for rather indistinct sutures which divide the fruit into quarters, the suture lines in many specimens encircling or nearly encircling the fruit and radiating from the corners of the 4-parted calyx; color bright yellowish red to dark orange red, depending upon stage of maturity; dots numerous, very minute, appearing indistinctly beneath the skin, hardly visible in some specimens; skin very thin, tender; bloom very light, whitish; flesh yellowish red at outer edge, losing yellowish shade as fruit softens, with numerous yellowish fibers through the flesh, these becoming indistinct as the fruit softens, translucent; texture buttery, tender, moderately juicy; core oblong, cylindrical, medium in size, closed; seeds very variable, many specimens seedless, sometimes 5 to 8 in number, plump or consisting merely of the unfilled integument, small to medium in size, rich brown in color, condition and number of seeds probably determined by extent of fertilization; flavor rich, sweet, somewhat astringent before ripening, but losing astringency upon softening; quality very good. Season in vicinity of Glen St. Mary usually begins in September and continues until toward the last of November, but the bulk of the fruit ripens the last week in October and the first half of November; when the weather is not too cold some specimens may hang on the trees until nearly Christmas.

¹ Letter from G. H. Norton, October, 1887.

The tree presents a very attractive appearance and holds its leaves later than most varieties of the Japanese type. Its growth even in the nursery row is very characteristic, and it is one of the few varieties that can readily be distinguished from the trees of other sorts. This is by reason of its peculiar bark and the pink color of the petioles when the leaves are young.¹ Some of the trees on the Kennedy home-stead at 4 years of age were estimated to bear 1,500 fruits.² Heavy bearing has continuously characterized the variety. It is a variety highly prized, especially for home use. Almost every landowner in the vicinity of Eustis has from one to a dozen trees of it.³ The skin is so thin and tender that it may be less desirable for shipping, except when marketed in a rather immature state.

The specimen illustrated in Plate XII was grown in 1913 by the Glen St. Mary Nurseries Co., Glen St. Mary, Baker County, Fla.

LUE ORANGE.

Synonym: *Lue Gim Gong*.

[PLATE XIII.]

EARLY HISTORY.

The history of the Lue orange as published by the American Pomological Society⁴ is substantially as follows:

In 1888, Mr. Lue Gim Gong, of De Land, Fla., pollinated the Hart (*Hart's Late*) with pollen of what was believed to be a Mediterranean (*Mediterranean Sweet*) orange. A single fruit containing 15 to 18 seeds resulted from this effort. From these seeds about 12 trees were grown, no two of which proved to be alike. One tree, when it came into bearing, produced fruit which appeared to be so superior to the Hart, which is the standard late orange in Florida, that Mr. Lue budded one side of each of 45 trees to it. Buds of the Hart (*Hart's Late*) orange were put into the other side of 15 of these trees, while several different sorts were budded into the other side of the remaining trees.

This variety was introduced to the trade in 1912 by the Glen St. Mary Nurseries Co., under the name "Lue Gim Gong" in honor to the originator. This name is reduced to Lue in conformity with the code of nomenclature of the American Pomological Society.

¹ Letter from H. Harold Hume, November, 1913.

² Letter from G. H. Norton, October, 1887.

³ Letter from Frank W. Savage, December, 1913.

⁴ Proceedings, American Pomological Society, 1911, p. 172.

DESCRIPTION.

Form roundish; large; cavity very small, shallow, somewhat furrowed; stem slender; apex a small tip in a very shallow basin; surface slightly undulating with indented dots; color rich orange yellow; oil cells numerous; rind relatively smooth, adherence medium, rather thin and tender; segments 10 to 12, fairly regular in size; flesh pale orange, tender; cells large, irregular, enveloping tissue thin; core nearly solid, filled with white pith; juice translucent, abundant; seeds plump, medium in size, straw color, few in number; flavor slightly subacid, pleasant; quality very good; season begins in July, but is mainly during August and September in Florida.

The tree is said to be hardier than most standard varieties. It makes a thrifty growth and is very productive. The fruit is said to hang to the tree well during the rainy season in Florida, which usually begins in June and lasts several weeks. The fruit ripens during a period when about the only oranges in the market are Valencias from California. It is remarkably heavy, does not lose moisture rapidly, and possesses excellent shipping and keeping qualities.

Its early promise of exceptional value has been fully realized as the older trees have come into bearing. It is considered of special importance as a late variety in the orange districts of Florida and worthy of careful test in other orange districts.

The specimen illustrated in Plate XIII was supplied in 1911 by the Glen St. Mary Nurseries Co., Glen St. Mary, Baker County, Fla.

BOONE CHESTNUT.

Synonym: *Daniel Boone*.

[PLATE XIV.]

EARLY HISTORY.

The Boone chestnut originated with the late George W. Endicott, of Villa Ridge, Pulaski County, Ill., and is a seedling of the Giant (*Japan Giant*) pollinated with an American chestnut. According to the originator, it took him seven years to find a tree of the latter which blossomed early enough to furnish pollen with which to pollinate the Giant. After finding one, he pollinated 20 blossoms of the Japanese variety in 1895. From this work he obtained 14 nuts. These were stored in moist sand during the following winter, and on April 1, 1896, they were planted.

All germinated, but with the exception of two trees they made a feeble growth and gave promise of no value. The two more vigorous trees made a growth of about $3\frac{1}{2}$ feet during the first season. One of these—the variety now under consideration—ripened six burs of nuts early in September of the following year; that is, the second year from seed.¹ The name by which the variety is known was applied by Mr. Endicott in 1902 after he became impressed with its value and was given in memory of that early American pioneer, Daniel Boone. He began propagating it about the same time for his own use, but it was introduced to the trade by Mr. E. A. Riehl, of Alton, Madison County, Ill. The name, appearing as "Daniel Boone," was published first in the Transactions of the Illinois State Horticultural Society for 1906.²

DESCRIPTION.

Burs large, color rather dark green; spines short, stiff, dense, several times branched on peduncles one-eighth to one-fourth inch long; nuts large, 55 to 62 per pound when fresh; usually 1 to 4 nuts to the bur, occasionally as many as 6; color rich brown, pubescent only at tip; shell of medium thickness; inner husk rather thick, quite pubescent; flavor sweet; quality good to very good, comparing favorably with the best of the Japanese varieties; season about September.

The tree is thrifty and vigorous, with a symmetrical, roundish head. In August, 1913, the original tree measured 38 inches in circumference at breast height and was estimated to have a height of 25 feet and a spread of limb of more than 30 feet. The foliage is dense and rich green in color; the leaflets average about 6 inches in length and are deeply serrated. The tree usually blossoms about June 5 and matures its crop before September 20, about 30 days earlier than the native American chestnuts growing in the same locality.

This variety is apparently strongly self-fertile and in this respect is unlike most chestnut trees. For the first three or four years after it came into bearing and while it was somewhat isolated from other trees, seedlings of it which were grown by Mr. Endicott came nearly "true to the variety," but later other trees standing near it began to blossom; following this the seedlings of Boone varied greatly.

¹ Letters from George W. Endicott, October and November, 1913.

² Transactions of the Illinois State Horticultural Society for the year 1906, vol. 40 (1906), p. 219.

The early bearing of the original Boone tree has been mentioned. It has continued to bear with remarkable constancy and regularity. With only one important exception, which was in 1910 when injured by a very late frost, the crop has been larger each year than it was in the preceding one. The bearing record of this tree as furnished by Mr. Endicott¹ is as follows:

Bearing record of the original Boone chestnut tree at Villa Ridge, Ill.

Year.	Pounds.	Year.	Pounds.	Year.	Pounds.	Year.	Pounds.	Year.	Pounds.	Year.	Pounds.
1897	¹ 6	1900	5	1903	12	1906	31	1909	56	1912	78
1898	1	1901	6	1904	17	1907	43	1910	25	1913	140
1899	3	1902	8	1905	23	1908	50	1911	80		

¹ Burs.

² Frost in June.

The crop of 1913 was sold at 30 cents per pound, giving a gross return for the one tree of \$42. But, obviously, such a large return is exceptional and not a safe basis for estimates of "average returns" for entire orchards.

The bur of nuts illustrated in Plate XIV was grown in 1913 by the late George W. Endicott, Villa Ridge, Pulaski County, Ill.

¹ Letter from Mr. Endicott, October, 1913.

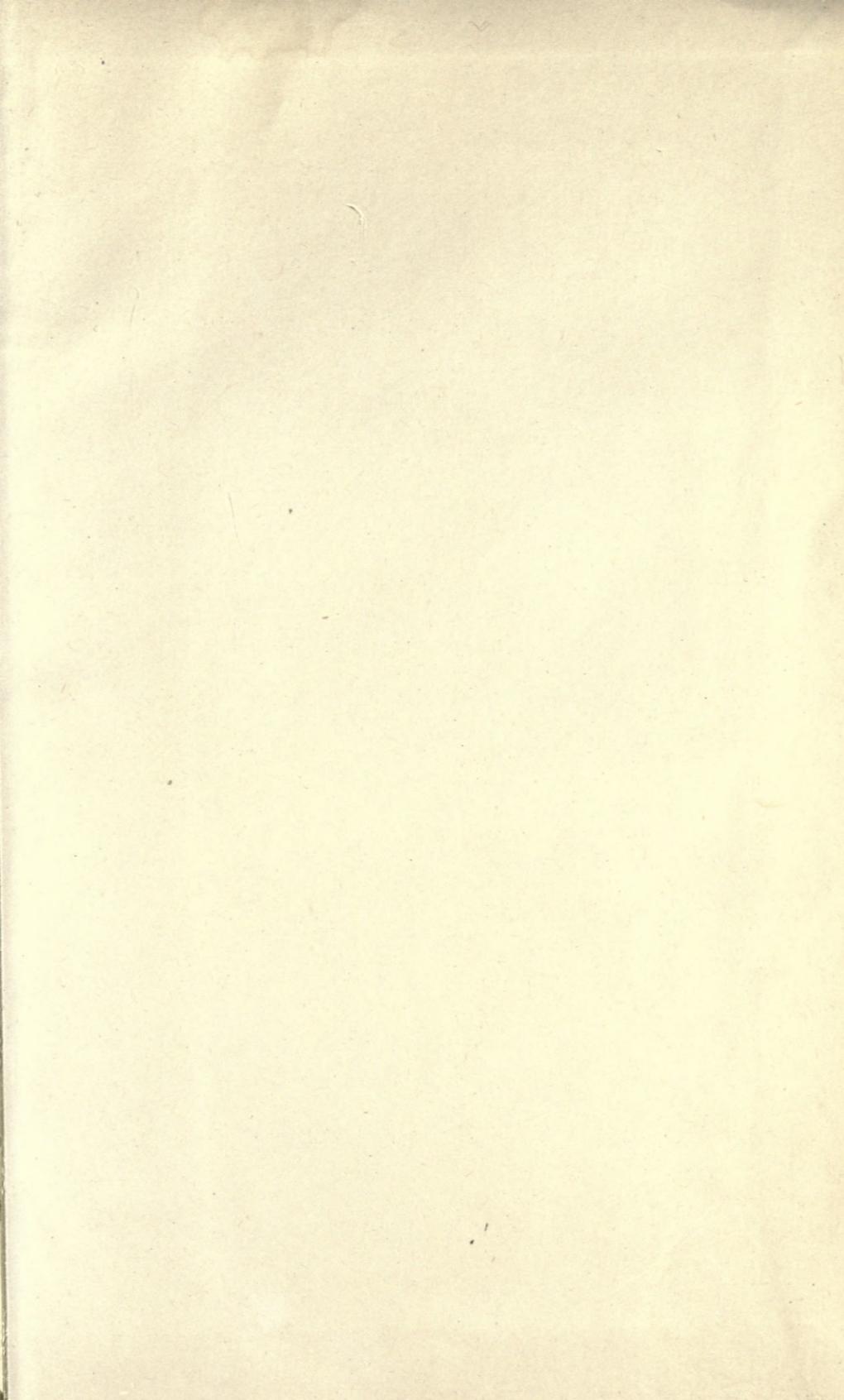
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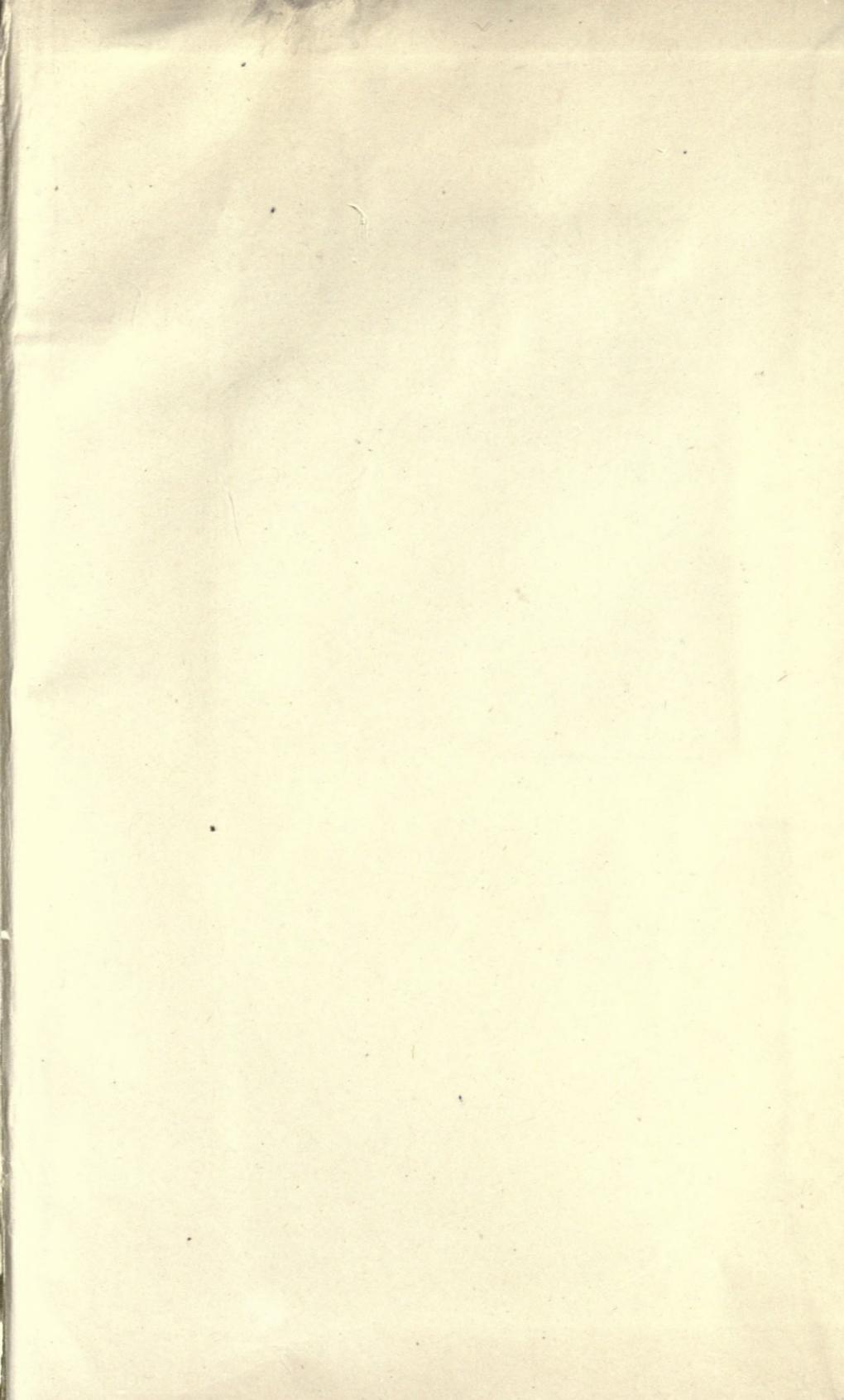
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